DEC 0 3 1985

594-C-17 FEM 1.209:210166

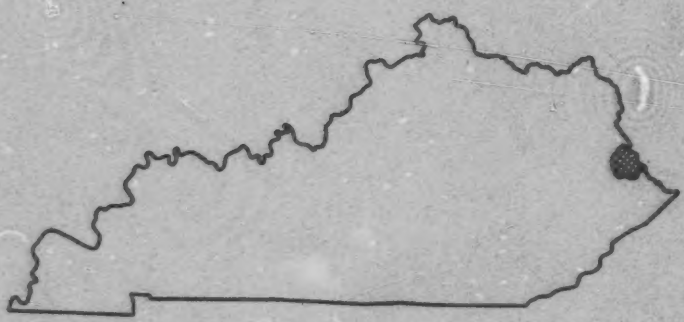
FLOOD INSURANCE STUDY

COMPLETED
135

ORIGINAL

MARTIN COUNTY, KENTUCKY

UNINCORPORATED AREAS



FEBRUARY 19, 1986

Federal Emergency Management Agency

COMMUNITY NUMBER - 210166

BEST COPY AVAILABLE

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Authority and Acknowledgements	1
1.3	Coordination	1
2.0	AREA STUDIED	2
2.1	Scope of Study	2
2.2	Community Description	4
2.3	Principal Flood Problems	6
2.4	Flood Protection Measures	6
3.0	ENGINEERING METHODS	6
3.1	Hydrologic Analyses	6
3.2	Hydraulic Analyses	7
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	12
4.1	Flood Boundaries	13
4.2	Floodways	13
5.0	INSURANCE APPLICATION	39
5.1	Reach Determinations	39
5.2	Flood Hazard Factors	40
5.3	Flood Insurance Zones	40
5.4	Flood Insurance Rate Map Description	41

BEST COPY AVAILABLE

TABLE OF CONTENTS (Continued)

		Page
6.0	OTHER STUDIES	41
7.0	LOCATION OF DATA	41
8.0	REFERENCES AND BIBLIOGRAPHY	45

FIGURES

Figure 1 -	Vicinity Map	3
Figure 2 -	Floodway Schematic	39

TABLES

Table 1 -	Summary of Discharges	8
Table 2 -	Range of "n" Values	12
Table 3 -	Floodway Data	14
Table 4 -	Flood Insurance Zone Data	42

EXHIBITS

Flood Profiles

Calf Creek	Panel	01P
Calf Creek Tributary	Panels	02P - 03P
Turkey Creek	Panels	04P - 05P
Long Fork	Panel	05P
Big Creek	Panel	06P
Big Elk Creek	Panel	07P
Buck Creek	Panel	08P
Right Fork Buck Creek	Panel	08P
Emily Creek	Panel	09P
Wolf Creek	Panels	10P - 11P
Flutylick Branch	Panel	12P
Friendship Tributary	Panel	13P
Tug Fork	Panels	13P - 18P
Rockhouse Fork	Panels	19P - 20P
Middle Fork	Panel	21P
Coldwater Fork	Panels	22P - 23P
Blacklog Fork	Panel	24P
White Oak Fork	Panel	25P
Pigeonroost Fork	Panels	26P - 27P

BEST COPY AVAILABLE

Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

BEST COPY AVAILABLE

FLOOD INSURANCE STUDY

MARTIN COUNTY,
UNINCORPORATED AREAS,
KENTUCKY

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Unincorporated Areas of Martin County, Kentucky, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound flood plain management. Minimum flood plain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgements

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (COE), Huntington District, Huntington, West Virginia, with technical support from the COE, Louisville District, for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. IAA-H-9-79, Project Order No. 26. This study was completed in October 1982.

1.3 Coordination

Streams requiring detailed study were identified at a meeting attended by representatives of the COE (the Study Contractor), FEMA, and Martin County in December 1978.

On November 7, 1984, the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

BEST COPY AVAILABLE.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Martin County, Kentucky. The area of study is shown on the Vicinity Map (Figure 1). The incorporated areas within the county were excluded from this study.

Flooding caused by the overflow of the following streams was studied in detail:

a. Calf Creek, from the mouth at Tug Fork to about 1.80 miles upstream of Calf Creek Road;

b. Calf Creek Tributary, from the mouth at Calf Creek to about 0.84 mile upstream of Calf Creek Road;

c. Turkey Creek, from the mouth at Tug Fork to the confluence of Long Fork;

d. Long Fork, from the confluence with Turkey Creek to about 0.3 mile upstream of the confluence;

e. Big Creek, from the mouth at Tug Fork to about 0.15 mile upstream of State Route 292;

f. Big Elk Creek, from the mouth at Tug Fork to about 1.35 miles upstream of State Route 292;

g. Buck Creek, from the mouth at Tug Fork to about 250 feet upstream of State Route 40;

h. Right Fork Buck Creek, from the confluence with Buck Creek to about 0.47 mile upstream of the confluence;

i. Emily Creek, from the mouth at Wolf Creek to about 0.52 mile upstream of the confluence of White Oak Fork;

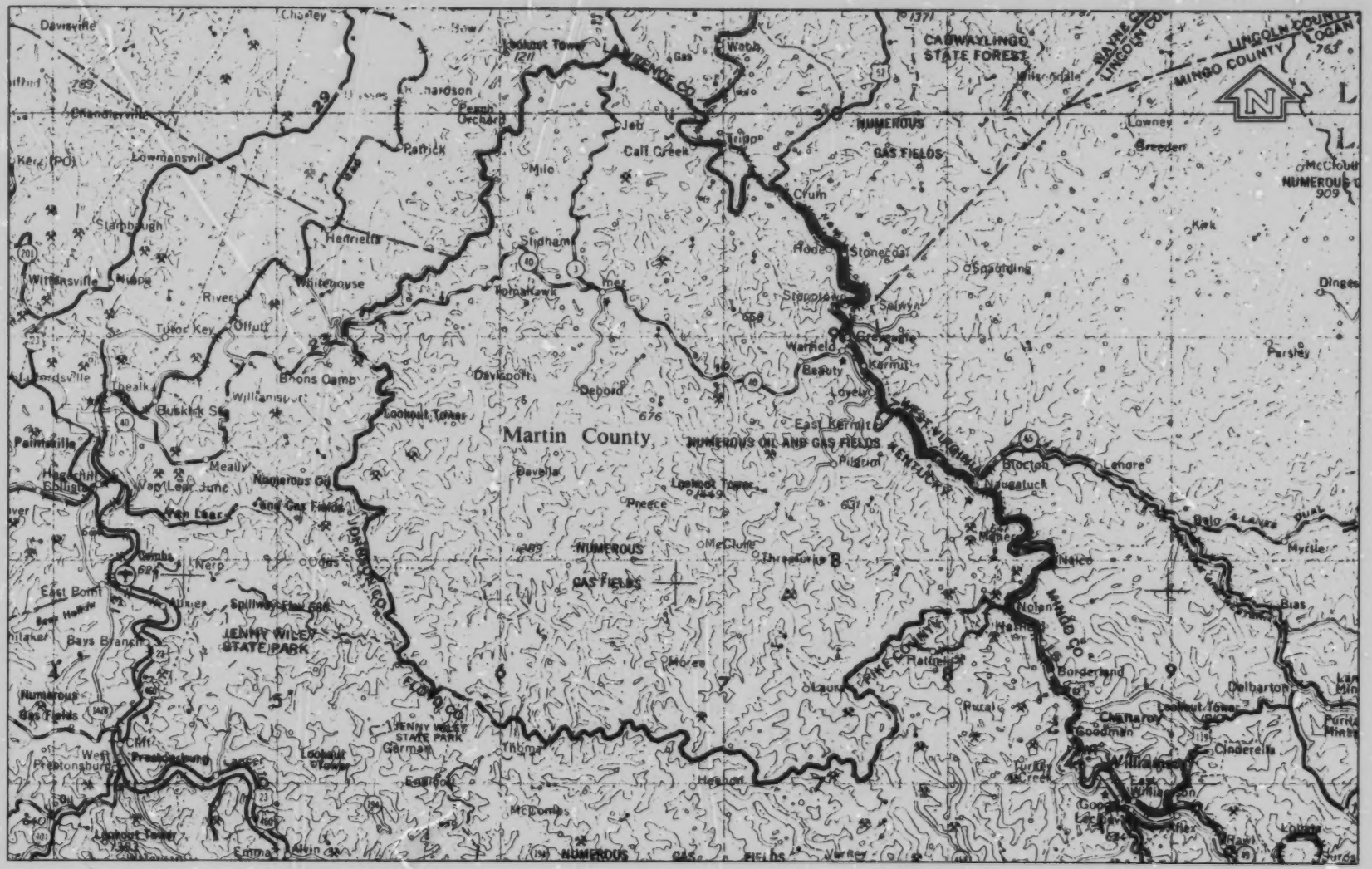
j. Wolf Creek, from the mouth at Tug Fork to about 0.7 mile upstream of the confluence of Little Rockcastle Creek;

k. Flutylick Branch, from the mouth at Tug Fork to about 40 feet upstream of State Route 292;

l. Friendship Tributary, from the confluence with Flutylick Branch to about 0.30 mile upstream of the confluence;

m. Tug Fork, from about 1.79 miles downstream of the confluence of Flutylick Branch to the confluence of Big Creek;

BEST COPY AVAILABLE


Martin County,
CABWAYLINGO STATE FOREST
WAYNE CO
LINCOLN CO
LINCOLN COUNTY
LOGAN
MINGO COUNTY
PIKE COUNTY
WEST VIRGINIA
KENTUCKY
NUMEROUS GAS FIELDS
NUMEROUS OIL AND GAS FIELDS
JENNY WILEY STATE PARK
Davisville
Chapley
Chandlerville
Lowmansville
Patrick
Peach Orchard
Job
Call Creek
Tripp
Milo
Watch
Gas
Lowney
Breeden
McCloud
Kirk
Dingess
Parsley
Stambaugh
Henrietta
Whitehouse
Williamsville
Tutor Key
Olllutt
Thealka
Bruns Camp
Williamsport
Buskirk
Palmsville
Meally
Numerous Oil
and Gas Fields
Van Lear
Van Lear June
Bays Branch
East Bond
Numerous Gas Fields
Presstonsburg
Lookout Tower
Emma
Alvin
Sidham
Davisport
Deboard
Davella
Preece
McClure
Threeforks
Thoma
Laura
Hores
Rural
Stoneco
Stapleton
Selwyn
Warfield
Beauty
Karmit
Loyalty
East Kermit
Pilgrim
Naugatuck
Lenore
Belo
Myrtle
Nelco
Borderland
Delbarton
Chattaroy
Goodman
Cinderella
Williamson
Lake Trace
Gopher
Kermit
Kurdo
Creek
Nolan
Hatfield
Bias
Mingo Co
Lookout Tower
Spillway
Elev 686
Numerous Gas Fields
Numerous Oil and Gas Fields
Numerous Gas Fields
Numerous Oil and Gas Fields
Numerous Gas Fields
Numerous Gas Fields
Numerous

n. Rockhouse Fork, from about 0.33 mile downstream of State Route 40 to about 0.49 mile upstream of State Route 1224;

o. Middle Fork, from about 0.97 mile downstream of Saltwell Branch Road to about 1.28 miles upstream of Saltwell Branch Road;

p. Coldwater Fork, from about 0.35 mile downstream of the confluence of Blacklog Fork to about 2.27 miles upstream of Moore Branch Road;

q. Blacklog Fork, from the mouth at Coldwater Fork to about 2.24 miles upstream of the mouth;

r. White Oak Fork, from the mouth at Emily Creek to about 0.87 mile upstream of the mouth; and,

s. Pigeonroost Fork, from the mouth at Wolf Creek to about 1.28 miles upstream of Norfolk Southern Railway.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards.

The areas studied were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through October 1987.

2.2 Community Description

Martin County is located in the coalfield region of eastern Kentucky. West Virginia borders the county on the east where Tug Fork of the Big Sandy River forms the state boundary lines. Martin County is bounded on the north by Lawrence County, on the west by Johnson and Floyd Counties, on the south by Pike County, and on the east by Wayne and Mingo Counties, West Virginia. The county covers a land area of 231 square miles and was formed in 1870 from parts of Pike, Floyd, Johnson, and Lawrence Counties. U.S. Bureau of the Census data indicate that there are no incorporated communities in the county. The economy of the county is based largely on the coal mining industry, which accounts for the major portion of county employment and earnings.

In 1880, the population of Martin County was 3,057. Between 1880 and 1950, population increased nearly fourfold to 11,677. Between 1950 and 1970, county population declined about 20 percent, representative of the population decreases in southeastern Kentucky during this period. The economic boom associated with coal all but collapsed, as unemployed and underemployed workers moved to larger urban centers seeking employment and opportunity. After two decades of economic decline and heavy population losses, the county experienced a remarkable recovery during the 1970s. As the market for coal increased, the region experienced a substantial economic boom that encouraged immigration to the area. From 1970 to 1980, the county population increased 48.5 percent to 13,925, compared to state and national increases of 13.7 percent and 11.5 percent, respectively (Reference 1).

BEST COPY AVAILABLE

Highway transportation in the county is provided by State Routes 40 and 3. State Route 40 serves the communities of Inez, Beauty, and Lovely. This highway links with U.S. Route 460, which connects with the Mountain Parkway to the west, and with U.S. 52 in West Virginia to the east. State Route 3 links with U.S. Route 23 and Interstate 64 to the north, and with U.S. Route 23 and State Route 80 to the south. State Routes 40 and 3 are two-lane roads and are generally well-maintained. Rail service in the county is provided by the Norfolk Southern Railway at Kermit, West Virginia. Feeder lines from the Norfolk Southern Railway extend from Kermit into Martin County. These lines are currently being used for the shipment of coal. Freight service is also provided by the Chessie System at Paintsville and Louisa, Kentucky.

Martin County and the general area are characterized by a mixture of northern and southern flora. With agriculture declining, there has been an increase in colonizing species. The diversity of habitat has produced a corresponding diversity of fish and wildlife.

The climate of the area is classified as humid mesothermal, characterized by considerable variation in the extremes of daily, monthly, and yearly temperature and precipitation. Seasonal variations in temperature range from an average of 37 degrees Fahrenheit (F.) in January to 76 degrees F. in July and August, with a mean temperature of about 57 degrees F. The growing season averages six months in length, from mid-April to mid-October. Average annual rainfall amounts to about 43.4 inches and average annual snowfall is about 18 inches.

The area is rugged and is characterized by irregular, narrow-crested ridges and deep winding valleys deeply entrenched in the land. Total relief in the county ranges from 700 to 2,000 feet. The rugged terrain has severely constrained social and economic development in the county. Coal mining and related activities have concentrated population into densely populated ribbons of settlements that occupy the flood plains along Tug Fork and several tributaries. Available land that can be used for crop production, housing, and urban areas makes up about 10 percent of the total land area.

The biggest asset of the county is the rich deposits of high-grade bituminous coal lying in horizontal beds that outcrop along the sides of the hills. Based on 1978 U.S. Department of Mine figures, the demonstrated reserve base is estimated at 450 million tons. Underground recoverable coal is estimated at 75 million tons, and surface recoverable coal, 117 million tons. Coal production has increased tremendously since 1964, when only 196,000 tons were produced, to 1.6 million tons in 1969, 6.8 million tons in 1975, and 13.2 million tons in 1980. In 1980, about 63 percent of the coal was produced by surface methods (8.3 million tons) as compared to 4.0 million tons produced by underground methods.

Development in the flood plain is mostly rural.

BEST COPY AVAILABLE

2.3 Principal Flood Problems

The eastern portion of Martin County is frequently affected by headwater flooding of Tug Fork and two of its tributaries, Buck Creek and Wolf Creek. Major floods occurred in the communities of Warfield, Beauty, and Lovely in 1957, 1963, and 1977. High water marks from the April 5, 1977 flood along Tug Fork are 627.9 feet National Geodetic Vertical Datum of 1929 (NGVD) in Warfield (near the mouth of Buck Creek), 630.0 feet NGVD in Lovely (near the mouth of Wolf Creek), and 655.8 feet NGVD in Nolan (near the mouth of Big Creek). All elevations were surveyed from April 11-13, 1977 (Reference 2).

In 1980, flooding of Buck Creek caused considerable flood damages in the community of Beauty. The floods are usually the result of headwater flooding, which leaves little time for advanced warning and recedes quickly after the flood crest is reached. Flooding has resulted in extensive damages to residential structures and contents, businesses, highways, and utilities.

2.4 Flood Protection Measures

The only protection measure in effect protecting Martin County is on Rockcastle Creek at Inez. This project, completed in 1970, consists of about 2.8 miles of channel improvement, including channel widening, and clearing. This project reduced the record flood of February 1972 by 3.5 feet NGVD.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each riverine flooding source studied in detail affecting the community.

Natural discharge-frequency curves used in this study were previously developed for the Tug Fork Basin to complete a "Special Flood Hazard

BEST COPY AVAILABLE

Information Report" (Reference 3) prepared by the COE, Huntington District. These data were updated and reanalyzed to conform to present FEMA guidelines. The curves are based on a regional analysis in accordance with the method outlined in "Statistical Methods of Hydrology" (Reference 4) and U.S. Water Resources Council Bulletin No. 17 (Reference 5). There are no stream gaging stations in Martin County. There is a gage located in Lawrence County at Tug Fork river mile 10.1 near Glenhayes, and one in Mingo County at Kermit, West Virginia, at about Tug Fork river mile 37.7. The gage at Glenhayes was installed in March 1976, and due to the short period of record, it was not used in the regional analysis. The Kermit gage in Mingo County has been in operation since July 1934 and most of the stage-discharge records are good.

To develop natural discharge-frequency curves for Tug Fork tributaries, 20 U.S. Geological Survey (USGS) stream gaging stations in the surrounding drainage basins displaying similar hydrologic characteristics were used in the regional analysis. Periods of record range from 16 to 60 years and represent drainage areas of 31 to 3,892 square miles. An "n" value of 60 years and a generalized skew coefficient of -0.1 were adopted as being representative and were used in computing the estimated frequency for each evaluating center.

Peak discharges for the 10-, 50-, 100-, and 500-year floods of each flooding source studied in detail in the community are shown in Table 1, Summary of Discharges.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of the floods of the selected recurrence intervals.

The original cross sections for the computer analysis in Martin County were obtained from two different sources: "Strip Mapping" (Reference 6) and "Aerial Photography, Ground Control, and Orthophoto Mapping" (Reference 7). In all streams studied by detailed methods, the cross sections were located at close intervals above and below bridges. To compute the backwater effects of these structures, bridge opening geometry was established by field measurements completed in January 1977 and July 1981. Both the Strip Mapping and the Orthophoto Mapping have 5-foot contour intervals at a map scale of 1:2400.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles. For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the Flood Boundary and Floodway Map.

Channel roughness coefficients (Manning's "n") for water-surface computations were determined on the bases of the characteristics of historical floods in this reach and existing flood plain conditions. The January-February 1957 flood was modeled to obtain representative "n"

BEST COPY AVAILABLE

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BIG CREEK					
At mouth	59.4	5,020	8,220	9,700	13,500
ROCKHOUSE FORK					
Just downstream of confluence of Stafford Fork	23.1	2,520	4,150	4,950	6,810
Just upstream of confluence of Stafford Fork	14.2	1,730	2,850	3,400	4,750
MIDDLE FORK					
Just downstream of confluence of Saltwell Branch	33.8	3,310	5,420	6,450	9,000
Just upstream of confluence of Saltwell Branch	31.0	3,050	5,100	6,020	8,410
COLDWATER FORK					
Just downstream of confluence of Blacklog Fork	28.1	2,700	4,420	5,220	7,280
Just upstream of confluence of Blacklog Fork	21.7	2,390	3,910	4,680	6,490
Just downstream of confluence of Camp Branch	19.7	2,200	3,640	4,350	6,000
Just upstream of confluence of Camp Branch	18.1	2,090	3,420	4,070	5,710
Just upstream of confluence of Moore Branch	17.2	2,010	3,310	3,950	5,490
Just upstream of confluence of Collins Branch	14.8	1,790	2,940	3,510	4,880
BLACKLOG FORK					
Just downstream of confluence of Little Blacklog Fork	5.9	910	1,510	1,800	2,530
Just upstream of confluence of Little Blacklog Fork	4.5	750	1,240	1,500	2,130

BEST COPY AVAILABLE

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BLACKLOG FORK					
About 2.2 miles upstream of State Route 908	2.3	490	835	1,010	1,490
FLUTYLICK BRANCH					
Just downstream of confluence of Friendship Tributary	1.0	340	600	750	1,110
FRIENDSHIP TRIBUTARY					
At mouth	0.6	290	520	660	1,000
CALF CREEK					
Just downstream of confluence of Calf Creek Tributary	1.8	435	750	920	1,350
Just upstream of confluence of Calf Creek Tributary	0.8	320	570	710	1,080
CALF CREEK TRIBUTARY					
At mouth	0.6	290	520	660	1,010
About 0.84 mile upstream of Calf Creek Road	0.1	165	340	420	685
TURKEY CREEK					
Just downstream of confluence of Dry Fork	4.4	740	1,220	1,480	2,100

BEST COPY AVAILABLE

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
TURKEY CREEK					
Just upstream of confluence of Dry Fork	3.7	660	1,100	1,320	1.900
Just upstream of confluence of Little Mud Lick	2.0	460	790	970	1,400
Just upstream of confluence of Long Fork	1.6	415	720	885	1,300
LONG FORK					
Just downstream of confluence of Pigeonroost Branch	0.8	315	560	705	1,070
Just upstream of confluence of Pigeonroost Branch	0.4	260	480	600	935
BIG ELK CREEK					
At mouth	7.3	1,055	1,730	2,080	2,910
About 1.55 miles upstream of State Route 292	6.8	1,010	1,670	2,000	2,810
BUCK CREEK					
At mouth	4.6	760	1,260	1,510	2,170
Just downstream of confluence of Right Fork Buck Creek	4.0	695	1,160	1,400	2,000
RIGHT FORK BUCK CREEK					
At mouth	2.1	475	805	985	1,400

BEST COPY AVAILABLE

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
WOLF CREEK					
Just downstream of confluence of Emily Creek	83.5	6,500	10,500	12,500	17,000
Just upstream of confluence of Emily Creek	62.9	5,300	8,600	10,000	14,000
Just upstream of confluence of Pigeonroost Fork	36.1	3,450	5,700	6,850	9,500
EMILY CREEK					
Just downstream of confluence of White Oak Fork	14.6	1,780	2,910	3,480	4,840
Just upstream of confluence of White Oak Fork	8.0	1,130	1,880	2,240	3,140
WHITE OAK FORK					
About 0.87 mile upstream of mouth	5.5	870	1,430	1,710	2,420
PIGEONROOST FORK					
At mouth	25.5	2,690	4,420	5,250	7,350
TUG FORK					
At USGS gage located about 0.8 mile downstream of Wolf Creek	1,274	55,000	82,500	95,000	128,000
At Kermit (river mile 33.46)	1,188	51,700	79,100	91,700	124,000
Just upstream of confluence of Pigeon Creek (river mile 41.70)	1,039	41,800	62,800	72,500	97,000

BEST COPY AVAILABLE

values for Tug Fork. The values for all other streams were determined by field inspection. The range of "n" values that were used for this study is shown in Table 2.

TABLE 2 - RANGE OF "n" VALUES

STREAM	CHANNEL	OVERBANK
Tug Fork	0.022 - 0.041	0.045 - 0.100
Rockhouse Fork	0.060	0.075
Middle Fork	0.045 - 0.050	0.060 - 0.065
Coldwater Fork	0.050	0.060
Blacklog Fork	0.045	0.060
Flutylick Branch	0.060	0.080
Friendship Tributary	0.060	0.080
Calf Creek Tributary	0.045 - 0.055	0.045 - 0.070
Turkey Creek	0.065 - 0.075	0.075 - 0.085
Long Fork	0.065	0.075
Big Elk Creek	0.055	0.075
Buck Creek	0.050 - 0.055	0.060 - 0.070
Right Fork Buck Fork	0.050 - 0.055	0.060 - 0.070
Wolf Creek	0.040 - 0.055	0.045 - 0.075
Emily Creek	0.055 - 0.060	0.045 - 0.030
White Oak Creek	0.055	0.065
Pigeonroost Fork	0.055	0.065
Calf Creek	0.050 - 0.065	0.055 - 0.080
Big Creek	0.050	0.100

Starting water-surface elevations on Tug Fork were obtained from the Lawrence County Flood Insurance Study (Reference 8). Starting water-surface elevations for all other streams studied in detail for Martin County were obtained by the slope-area method. Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. Water-surface elevations of floods of the selected recurrence intervals were developed using the COE HEC-2 computer program (Reference 9).

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations shown on the profiles are, thus, considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced from NGVD. Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing flood plain management measures.

BEST COPY AVAILABLE

4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for flood plain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year flood plain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections the boundaries were interpolated using topographic maps at a scale of 1:2400, with a contour interval of 5 feet (Reference 10).

For the streams studied by approximate methods only the 100-year flood plain boundary was delineated using the existing Flood Hazard Boundary Map (Reference 11) and topographic maps at a scale of 1:24000 with a contour interval of 40 feet (Reference 12).

The 100- and 500-year flood plain boundaries are shown on the Flood Boundary and Floodway Map. In cases where the 100- and 500-year flood plain boundaries are close together, only the 100-year boundary has been shown. Small areas within the flood plain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on flood plains, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood plain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed and are presented in Table 3, Floodway Data.

As shown on the Flood Boundary and Floodway Map, the floodway boundaries were computed at cross sections. Between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown. Portions of the floodway of Tug Fork lie outside the county boundary.

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY[2] (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CALF CREEK								
A	0.051	30	213	4.3	609.9	564.7	565.7	1.0
B	0.120	34	215	4.3	609.9	566.3	567.1	0.8
C	0.183	33	144	6.4	609.9	569.4	569.7	0.3
D	0.252	25	249	3.7	609.9	581.6	581.6	0.0
E	0.316	55	541	1.7	609.9	581.8	581.9	0.1
F	0.380	52	396	2.3	609.9	582.0	582.1	0.1
G	0.453	42	190	4.8	609.9	583.0	583.6	0.6
H	0.466	53	316	2.9	609.9	586.5	587.3	0.8
I	0.537	33	173	5.3	609.9	587.3	588.1	0.8
J	0.609	27	158	5.8	609.9	589.1	590.0	0.9
K	0.656	28	126	7.3	609.9	591.2	592.1	0.9
L	0.680	23	158	5.8	609.9	593.9	594,7	0.8
M	0.744	21	137	6.7	609.9	595.7	596.6	0.9
N	0.800	48	236	3.9	609.9	597.3	598.2	0.9
O	0.850	23	123	5.8	609.9	598.1	599.0	0.9

[1]Miles above mouth
[2]Elevation without considering backwater effect from Tug Fork

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

CALF CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CALF CREEK TRIBUTARY								
A	0.043	24	99	6.6	609.9	602.3[2]	603.2	0.9
B	0.126	30	124	5.3	611.6	611.6	612.5	0.9
C	0.141	30	120	5.5	612.2	612.2	613.1	0.9
D	0.226	31	96	6.3	628.6	628.6	629.0	0.4
E	0.244	34	161	3.8	629.4	629.4	630.4	1.0
F	0.410	24	67	8.5	655.1	655.1	655.5	0.4
G	0.559	18	91	5.9	669.6	669.6	670.5	0.9
H	0.725	19	57	8.8	706.6	706.6	707.0	0.4
I	0.850	22	75	5.6	722.3	722.3	723.0	0.7

[1]Miles above mouth
[2]Elevation without considering backwater effect from Tug Fork

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

CALF CREEK TRIBUTARY

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TURKEY CREEK								
A	0.159	36	381	4.0	612.0	579.9[2]	580.9	1.0
B	0.194	57	514	3.0	612.0	580.9[2]	581.7	0.8
C	0.342	133	973	1.6	612.0	581.7[2]	582.5	0.8
D	0.458	92	637	2.4	612.0	582.1[2]	583.0	0.9
E	0.560	72	496	3.0	612.0	582.8[2]	583.8	1.0
F	0.631	62	382	3.9	612.0	583.7[2]	584.7	1.0
G	0.686	41	319	4.6	612.0	586.8[2]	587.3	0.5
H	0.754	79	489	3.0	612.0	587.9[2]	588.7	0.8
I	0.853	56	387	3.8	612.0	589.0[2]	590.0	1.0
J	0.994	73	473	3.1	612.0	590.8[2]	591.8	1.0
K	1.013	67	481	3.1	612.0	592.2[2]	593.2	1.0
L	1.147	107	712	1.9	612.0	593.1[2]	594.1	1.0
M	1.167	94	534	2.5	612.0	593.3[2]	594.3	1.0
N	1.342	53	325	4.1	612.0	595.4[2]	596.3	0.9
O	1.481	43	255	5.2	612.0	598.9[2]	599.8	0.9
P	1.643	52	315	4.2	612.0	603.3[2]	604.1	0.8
Q	1.663	72	374	3.5	612.0	604.4[2]	605.3	0.9
R	1.883	45	239	5.5	612.0	610.4[2]	610.4	0.0
S	2.029	36	204	6.5	616.1	616.1	616.6	0.5
T	2.075	18	154	8.6	619.6	619.6	619.9	0.3
U	2.100	39	342	3.9	620.8	620.8	621.7	0.8
V	2.322	82	440	3.0	623.5	623.5	624.5	1.0
W	2.400	105	779	1.2	627.1	627.1	628.1	1.0

[1]Miles above mouth
[2]Elevations without considering backwater effect from Tug Fork

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TURKEY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TURKEY CREEK								
X	2.468	51	282	3.4	627.2	627.2	628.2	1.0
Y	2.616	42	208	4.7	632.7	632.7	633.5	0.8
Z	2.770	51	241	4.0	643.6	643.6	644.5	0.9
AA	2.852	26	147	6.6	646.8	646.8	647.4	0.6
AB	2.958	36	193	5.0	653.9	653.9	654.7	0.8
AC	2.996	64	335	2.6	654.8	654.8	655.7	0.9
LONG FORK								
AD	3.018	21	109	6.5	655.4	655.4	656.2	0.8
AE	3.116	32	123	5.7	662.6	662.6	663.6	1.0
AF	3.219	16	75	8.0	671.8	671.8	672.7	0.9
AG	3.300	15	69	8.6	681.8	681.8	682.7	0.9

[1]Miles above mouth

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TURKEY CREEK—LONG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY[4] (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BIG CREEK								
A	525[1]	203[3]	1646	5.9	652.0	629.0	629.5	0.5
BIG ELK CREEK								
A	0.047[2]	50	356	5.8	613.0	573.3	573.7	0.4
B	0.375[2]	49	397	5.2	613.0	580.5	581.2	0.7
C	0.700[2]	46	371	5.4	613.0	583.8	584.7	0.9
D	0.877[2]	50	485	4.1	613.0	588.5	589.5	1.0
E	0.996[2]	97	732	2.7	613.0	589.5	590.4	0.9
F	1.190[2]	60	432	4.6	613.0	951.5	592.4	0.9
G	1.390[2]	58	431	4.6	613.0	593.5	594.5	1.0

[1]Feet above mouth
[2]Miles above mouth
[3]This width extends beyond county boundary
[4]Elevations without considering backwater effect from Tug Fork

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BIG CREEK--BIG ELK CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BUCK CREEK								
A	1.144	51	363	3.9	624.5	619.4[2]	620.3	0.9
B	1.237	65	385	3.6	624.5	620.6[2]	621.5	0.9
C	1.267	38	260	5.4	624.5	621.4[2]	622.3	0.9
D	1.334	33	224	6.3	624.5	622.8[2]	623.8	1.0
E	1.405	76	355	3.9	624.5	624.3[2]	625.2	0.9
F	1.450	93	260	5.4	625.4	625.4	625.9	0.5
G	1.472	120	580	2.4	629.3	629.3	629.3	0.0
H	1.481	72	437	3.2	629.3	629.3	629.3	0.0
I	1.519	69	487	2.9	629.6	629.6	629.7	0.1
J	1.534	70	508	2.8	629.6	629.6	629.7	0.1

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM TUG FORK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BUCK CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
RIGHT FORK BUCK CREEK								
K	1.660	33	208	4.7	630.1	630.1	630.5	0.4
L	1.730	25	150	6.6	631.0	631.0	631.8	0.8
M	1.782	29	180	5.5	634.0	634.0	634.8	0.8
N	1.801	21	119	8.3	634.4	634.4	635.1	0.7
O	1.818	25	146	6.7	635.7	635.7	636.2	0.5
P	1.909	21	143	6.9	638.7	638.7	639.6	0.9
Q	2.007	22	141	7.0	642.4	642.4	643.3	0.9
EMILY CREEK								
A	0.114	86	833	4.2	628.2	618.7[2]	619.7	1.0
B	0.219	56	611	5.7	628.2	619.5[2]	620.5	1.0
C	0.327	50	594	5.9	628.2	621.1[2]	622.1	1.0
D	0.456	67	733	4.7	628.2	622.8[2]	623.8	1.0
E	0.582	62	687	5.1	628.2	624.1[2]	625.0	0.9
F	0.754	112	896	3.9	628.2	626.0[2]	626.9	0.9
G	0.851	59	605	5.8	628.2	627.0[2]	627.8	0.8
H	0.984	161	1315	1.7	628.8	628.8	629.8	1.0
I	1.055	59	539	4.2	629.0	629.0	629.9	0.9
J	1.108	41	466	4.8	634.0	634.0	634.6	0.6
K	1.300	32	429	5.2	635.8	635.8	636.7	0.9
L	1.398	56	532	4.2	636.9	636.9	637.9	1.0
M	1.492	91	726	3.1	637.8	637.8	638.8	1.0

[1] Miles above mouth
[2] Elevations without considering backwater effect from Wolf Creek

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RIGHT FORK BUCK CREEK--EMILY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY[2] (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WOLF CREEK								
A	0.283	93	2125	5.9	628.0	609.6	610.6	1.0
B	0.468	136	3215	3.9	628.0	610.3	611.3	1.0
C	0.623	97	2157	5.8	628.0	610.5	611.4	0.9
D	0.848	122	2801	4.5	628.0	611.3	612.2	0.9
E	1.058	127	2582	4.8	628.0	611.7	612.6	0.9
F	1.264	98	2011	6.2	628.0	612.2	613.2	1.0
G	1.293	119	1926	6.5	628.0	613.0	614.0	1.0
H	1.508	122	2404	5.2	628.0	614.2	615.1	0.9
I	1.695	124	2471	5.1	628.0	614.8	615.7	0.9
J	2.051	126	2407	5.2	628.0	615.7	616.7	1.0
K	2.155	121	2041	6.1	628.0	616.1	617.1	1.0
L	2.287	154	2706	4.6	628.0	616.9	617.8	0.9
M	2.512	163	2835	4.4	628.0	617.6	618.5	0.9
N	2.740	155	2258	5.5	628.0	618.2	619.1	0.9
O	2.840	98	1672	7.5	628.0	618.7	619.6	0.9
P	2.995	80	1386	9.0	628.0	619.9	620.7	0.8
Q	3.024	66	1401	8.9	628.0	621.7	622.6	0.9
R	3.054	85	1710	7.3	628.0	622.2	623.2	1.0
S	3.125	164	2473	5.1	628.0	622.9	623.9	1.0
T	3.222	256	3325	3.8	628.0	623.4	624.4	1.0
U	3.446	180	2666	4.7	628.0	623.9	624.9	1.0
V	3.500	171	2805	4.5	628.0	624.1	625.1	1.0

[1]Miles above mouth
[2]Elevations without considering backwater effect from Tug Fork

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

WOLF CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WOLF CREEK								
W	3.530	208	3470	3.6	628.0	624.7[2]	625.7	1.0
X	3.626	159	2985	4.2	628.0	624.9[2]	625.9	1.0
Y	3.702	116	2466	5.1	628.0	625.0[2]	626.0	1.0
Z	3.731	134	2796	4.5	628.0	625.9[2]	626.9	1.0
AA	3.916	162	2851	4.4	628.0	626.7[2]	627.6	0.9
AB	3.990	192	3356	3.7	628.0	626.9[2]	627.8	0.9
AC	4.110	246	4470	2.8	628.0	627.2[2]	628.1	0.9
AD	4.364	301	4370	2.9	628.0	627.7[2]	628.6	0.9
AE	4.476	197	2764	3.6	628.0	627.8[2]	628.7	0.9
AF	4.607	193	3073	3.3	628.1	628.1	629.1	1.0
AG	4.711	128	2115	4.7	628.2	628.2	629.2	1.0
AH	4.740	111	1875	5.3	628.7	628.7	629.7	1.0
AI	4.899	178	3021	3.3	629.4	629.4	630.4	1.0
AJ	4.927	178	3018	3.3	629.7	629.7	630.7	1.0
AK	5.142	155	3135	3.2	629.9	629.9	630.9	1.0
AL	5.367	119	2365	4.2	630.1	630.1	631.1	1.0
AM	5.485	99	2051	4.9	630.2	630.2	631.2	1.0
AN	5.657	109	1994	5.0	630.6	630.6	631.6	1.0
AO	5.867	114	2056	4.9	631.5	631.5	632.4	0.9
AP	6.060	167	2211	4.5	632.2	632.2	633.2	1.0
AQ	6.202	155	1936	5.2	632.8	632.8	633.8	1.0
AR	6.231	141	2156	4.6	633.3	633.3	634.3	1.0

[1]Miles above mouth
[2]Elevations without considering backwater effect from Tug Fork

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

WOLF CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WOLF CREEK								
AS	6.364	124	1988	5.0	633.8	633.8	634.8	1.0
AT	6.606	169	2542	3.9	635.2	635.2	636.1	0.9
AU	6.693	290	3582	1.9	635.6	635.6	636.5	0.9
AV	6.841	195	2621	2.6	635.7	635.7	636.6	0.9
AW	6.980	283	3092	2.2	636.0	636.0	636.9	0.9
AX	7.135	120	1624	4.2	636.3	636.3	637.2	0.9
AY	7.301	88	946	7.1	637.1	637.1	638.0	0.9
AZ	7.530	140	1654	4.1	639.7	639.7	640.6	0.9
BA	7.731	100	1304	5.2	640.8	640.8	641.8	1.0

[1]Miles above mouth

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

WOLF CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY[2] (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
FLUTYLICK BRANCH								
A	0.019	17	91	8.3	609.0	560.7	561.7	1.0
B	0.059	17	71	10.5	609.0	567.1	567.1	0.0
FRIENDSHIP TRIBUTARY								
C	0.140	29	160	4.1	609.0	578.3	578.7	0.4
D	0.204	33	170	3.9	609.0	581.4	582.4	1.0
E	0.290	25	76	8.7	609.0	585.4	585.4	0.0
F	0.380	43	130	4.5	609.0	595.0	595.8	0.8

[1]Miles above mouth
[2]Elevations without considering backwater effect from Tug Fork

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

FLUTYLICK BRANCH— FRIENDSHIP TRIBUTARY

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
A	19.582	382	16,354	5.8	608.2	608.2	609.2	1.0
B	19.910	341	15,350	6.2	608.3	608.3	609.3	1.0
C	20.116	339	15,434	6.2	608.5	608.5	609.5	1.0
D	20.231	336	15,210	6.2	608.5	608.5	609.5	1.0
E	20.357	465	15,335	6.2	608.5	608.5	609.5	1.0
F	20.503	328	14,682	6.5	608.6	608.6	609.6	1.0
G	20.645	330	14,277	6.7	608.7	608.7	609.7	1.0
H	20.759	315	13,689	6.9	608.7	608.7	609.7	1.0
I	20.959	293	12,731	7.5	608.8	608.8	609.8	1.0
J	21.133	281	12,886	7.4	609.0	609.0	610.0	1.0
K	21.294	343	13,202	7.2	609.0	609.0	610.0	1.0
L	21.441	361	12,629	7.5	609.1	609.1	610.1	1.0
M	21.602	455	12,376	7.7	609.2	609.2	610.2	1.0
N	21.715	496	13,196	7.2	609.3	609.3	610.3	1.0
O	21.890	490	16,116	5.9	610.4	610.4	611.4	1.0
P	22.080	419	14,782	6.4	610.4	610.4	611.4	1.0
Q	22.164	403	14,544	6.5	610.5	610.5	611.5	1.0
R	22.390	262	12,246	7.8	610.6	610.6	611.5	0.9
S	22.631	297	12,871	7.4	610.8	610.8	611.7	0.9
T	22.828	325	13,871	6.8	611.0	611.0	611.9	0.9
U	23.015	349	13,389	7.1	611.1	611.1	612.0	0.9
V	23.194	306	13,091	7.3	611.3	611.3	612.2	0.9
W	23.437	305	13,577	7.0	611.6	611.6	612.6	1.0

[1]Miles above mouth
[2]This width extends beyond county boundary

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
X	23.967	332	13,979	6.8	612.0	612.0	612.9	0.9
Y	24.088	348	13,834	6.9	612.1	612.1	613.0	0.9
Z	24.267	314	13,097	7.3	612.2	612.2	613.1	0.9
AA	24.408	355	14,148	6.7	612.3	612.3	613.3	1.0
AB	24.640	293	12,323	7.7	612.4	612.4	613.3	0.9
AC	24.761	337	12,947	7.3	612.5	612.5	613.4	0.9
AD	25.021	271	11,889	8.0	612.7	612.7	613.6	0.9
AE	25.506	284	12,222	7.8	613.2	613.2	614.2	1.0
AF	25.671	295	12,065	7.9	613.3	613.3	614.2	0.9
AG	25.924	391	13,948	6.8	613.7	613.7	614.7	1.0
AH	26.109	278	11,746	8.1	613.8	613.8	614.7	0.9
AI	26.351	291	12,496	7.6	614.1	614.1	615.1	1.0
AJ	26.488	267	11,201	8.5	614.2	614.2	615.2	1.0
AK	26.645	301	12,101	7.9	614.3	614.3	615.3	1.0
AL	26.781	282	12,128	7.8	614.5	614.5	615.5	1.0
AM	26.884	287	12,555	7.6	614.7	614.7	615.7	1.0
AN	26.992	269	12,083	7.9	614.7	614.7	615.7	1.0
AO	27.142	316	13,256	7.2	615.0	615.0	616.0	1.0
AP	27.297	324	12,043	7.9	615.0	615.0	616.0	1.0
AQ	27.442	324	12,867	7.4	615.2	615.2	616.2	1.0
AR	27.612	305	12,113	7.8	615.4	615.4	616.4	1.0

[1]Miles above mouth
[2]This width extends beyond county boundary

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
AS	27.830	291	11,396	8.3	615.6	615.6	616.6	1.0
AT	27.972	325	12,373	7.7	615.8	615.8	616.8	1.0
AU	28.090	341	12,817	7.4	615.9	615.9	616.9	1.0
AV	28.245	292	11,837	8.0	616.0	616.0	617.0	1.0
AW	28.394	286	11,473	8.3	616.1	616.1	617.1	1.0
AX	28.704	323	12,607	7.5	616.6	616.6	617.6	1.0
AY	28.810	306	12,109	7.8	616.7	616.7	617.7	1.0
AZ	28.952	298	11,486	8.3	616.7	616.7	617.7	1.0
BA	29.112	322	12,339	7.7	617.1	617.1	618.1	1.0
BB	29.340	350	12,927	7.3	617.3	617.3	618.3	1.0
BC	29.502	343	12,588	7.5	617.5	617.5	618.5	1.0
BD	29.578	358	12,710	7.5	617.5	617.5	618.5	1.0
BE	29.820	339	12,710	7.5	617.8	617.8	618.8	1.0
BF	30.005	293	10,812	8.8	617.9	617.9	618.9	1.0
BG	30.193	334	13,021	7.3	618.4	618.4	619.3	0.9
BH	30.416	316	12,496	7.6	618.6	618.6	619.5	0.9
BI	30.640	339	12,631	7.5	618.8	618.8	619.7	0.9
BJ	30.883	360	14,116	6.7	619.2	619.2	620.1	0.9
BK	31.103	394	14,631	6.5	619.4	619.4	620.3	0.9
BL	31.303	470	13,451	7.1	619.4	619.4	620.3	0.9
BM	31.470	312	12,174	7.8	619.6	619.6	620.5	0.9
BN	31.635	287	11,744	8.1	619.7	619.7	620.6	0.9

[1]Miles above mouth
[2]This width extends beyond county boundary

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
BO	31.765	419	12,683	7.5	619.8	619.8	620.7	0.9
BP	31.928	352	11,984	7.9	620.0	620.0	620.9	0.9
BQ	32.145	283	10,372	9.2	620.1	620.1	621.0	0.9
BR	32.337	270	10,620	8.9	620.5	620.5	621.4	0.9
BS	32.493	260	9,632	9.9	620.6	620.6	621.5	0.9
BT	32.758	265	10,808	8.8	621.2	621.2	622.1	0.9
BU	32.960	298	11,805	8.0	621.7	621.7	622.6	0.9
BV	33.135	299	11,523	8.2	621.8	621.8	622.7	0.9
BW	33.460	388	14,845	6.2	622.6	622.6	623.6	1.0
BX	33.840	379	11,916	7.7	622.6	622.6	623.6	1.0
BY	34.190	380[3]	10,648	8.6	622.9	622.9	623.9	1.0
BZ	34.590	353[3]	13,086	7.0	624.5	624.5	625.4	0.9

[1]MILES ABOVE MOUTH
[2]THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY
[3]THIS WIDTH IS WITHIN AREA NOT INCLUDED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
CA	34.920	252	10,268	8.9	624.5	624.5	625.4	0.9
CB	35.150	311	12,142	7.6	625.7	625.7	626.7	1.0
CC	35.180	325	12,396	7.4	626.3	626.3	627.3	1.0
CD	35.380	298	10,848	8.5	626.3	626.3	627.3	0.9
CE	35.540	277	11,605	7.9	626.6	626.6	627.5	0.9
CF	35.770	450	12,901	7.1	627.1	627.1	628.0	0.9
CG	35.980	442	12,374	7.4	627.5	627.5	628.5	1.0
CH	36.390	824	12,800	7.2	628.8	628.8	629.7	0.9
CI	36.680	553	14,220	6.4	629.6	629.6	630.5	0.9
CJ	36.970	483	15,275	6.0	630.0	630.0	630.9	0.9
CK	37.400	295	10,665	8.6	630.3	630.3	631.2	0.9
CL	37.640	249	10,461	8.8	631.0	631.0	631.9	0.9
CM	38.050	328	12,621	7.3	632.1	632.1	633.0	0.9
CN	38.410	311	12,004	7.6	632.6	632.6	633.5	0.9
CO	38.670	300	11,016	8.3	633.4	633.4	634.0	0.6
CP	38.860	270	11,256	8.1	633.8	633.8	634.7	0.9
CQ	39.050	326	13,472	6.8	634.3	634.3	635.2	0.9
CR	39.280	302	11,350	7.7	634.5	634.5	635.4	0.9
CS	39.470	328	12,992	7.1	635.0	635.0	635.9	0.9
CT	39.680	289	11,885	7.7	635.3	635.3	636.2	0.9
CU	39.870	225	8,712	10.5	635.3	635.3	636.2	0.9
CV	40.050	290	11,422	8.0	636.4	636.4	637.3	0.9
CW	40.260	258	10,148	9.0	636.7	636.7	637.6	0.9

[1]MILES ABOVE MOUTH
[2]THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
CX	40.400	341	13,106	7.0	637.6	637.6	638.5	0.9
CY	40.540	396	12,475	7.4	637.8	637.8	638.7	0.9
CZ	40.680	393	12,668	7.7	638.1	638.1	639.1	1.0
DA	40.850	304	11,968	7.7	638.4	638.4	639.4	1.0
DB	40.990	324	12,532	7.5	638.6	638.6	639.6	1.0
DC	41.170	271	10,789	8.7	638.8	638.8	639.8	1.0
DD	41.360	327	12,764	7.4	639.5	639.5	640.5	1.0
DE	41.530	618	18,621	5.1	640.5	640.5	641.5	1.0
DF	41.690	531	16,026	4.6	640.7	640.7	641.7	1.0
DG	41.860	371	12,620	5.7	640.8	640.8	641.8	1.0
DH	42.020	397	12,093	6.0	640.9	640.9	641.9	1.0
DI	42.300	353	11,809	6.1	641.4	641.4	642.3	0.9
DJ	42.450	319	10,598	6.8	641.5	641.5	642.4	0.9
DK	42.600	320	10,942	6.6	641.8	641.8	642.7	0.9
DL	42.750	248	10,065	7.2	642.0	642.0	642.9	0.9
DM	42.920	293	11,309	6.4	642.4	642.4	643.3	0.9
DN	43.060	295	10,980	6.6	642.5	642.5	643.4	0.9
DO	43.170	238	9574	7.6	642.6	642.6	643.5	0.9
DP	43.350	250	9898	7.3	643.0	643.0	644.0	1.0
DQ	43.510	398	12,811	5.7	643.5	643.5	644.5	1.0
DR	43.660	310	11,834	6.1	643.7	643.7	644.7	1.0
DS	43.860	290	11,103	6.5	643.9	643.9	644.9	1.0
DT	44.010	380	13,995	5.2	644.3	644.3	645.3	1.0

[1]Miles above mouth
[2]This width extends beyond county boundary

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
DU	44.170	420	14,612	5.0	644.5	644.5	645.5	1.0
DV	44.370	393	11,652	6.2	644.6	644.6	645.6	1.0
DW	44.570	507	11,567	6.3	644.8	644.8	645.8	1.0
DX	44.780	551	13,138	5.5	645.2	645.2	646.2	1.0
DY	44.950	750	11,868	6.1	645.3	645.3	646.3	1.0
DZ	45.080	311	11,034	6.6	645.6	645.6	646.6	1.0
EA	45.230	254	9910	7.3	645.8	645.8	646.8	1.0
EB	45.480	277	10,687	6.8	646.3	646.3	647.3	1.0
EC	45.670	422	13,433	5.4	646.9	646.9	647.9	1.0
ED	45.830	429	12,337	5.9	647.0	647.0	648.0	1.0
EE	46.070	327	11,429	6.3	647.3	647.3	648.3	1.0
EF	46.340	473	15,276	4.7	647.9	647.9	648.8	0.9
EG	46.490	456	13,884	5.2	648.0	648.0	649.0	1.0
EH	46.650	493	14,070	5.2	648.2	648.2	649.2	1.0
EI	46.780	426	12,785	5.7	648.4	648.4	649.4	1.0
EJ	47.010	326	11,244	6.4	648.6	648.6	649.5	0.9
EK	47.150	446	11,866	6.1	648.9	648.9	649.8	0.9
EL	47.350	355	12,262	5.9	649.2	649.2	650.1	0.9
EM	47.550	376	12,208	5.9	649.4	649.4	650.3	0.9
EN	47.700	281	10,799	6.7	649.6	649.6	650.5	0.9
EO	47.820	308	11 000	6.6	649.8	649.8	650.7	0.9
EP	47.980	291	10,618	6.8	650.0	650.0	650.9	0.9
EQ	48.150	324	11,104	6.5	650.3	650.3	651.2	0.9

[1]Miles above mouth
[2]This width extends beyond county boundary

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
ER	48.270	262[2]	9959	7.3	650.4	650.4	651.3	0.9
ES	48.450	292[2]	11,017	6.6	650.9	650.9	651.8	0.9
ET	48.600	316[2]	11,984	6.0	651.2	651.2	652.1	0.9
EU	48.700	310[2]	11,326	6.4	651.3	651.3	652.2	0.9
ROCKHOUSE FORK								
A	5.287	166	1226	4.0	649.6	649.6	650.6	1.0
B	5.457	125	881	5.6	652.2	652.2	653.1	0.9
C	5.734	99	976	5.1	656.8	656.8	657.8	1.0
D	5.897	122	1265	3.9	658.2	658.2	659.1	0.9
E	6.240	102	1142	4.3	660.4	660.4	661.3	0.9
F	6.509	155	1389	3.6	662.5	662.5	663.5	1.0
G	6.821	99	896	5.5	664.9	664.9	665.9	1.0
H	7.155	183	1392	3.6	668.1	668.1	669.1	1.0
I	7.559	232	1662	3.0	671.0	671.0	672.0	1.0
J	7.888	201	1201	2.8	672.4	672.4	673.3	0.9

[1]Miles above mouth
[2]This width extends beyond county boundary

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK—ROCKHOUSE FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MIDDLE FORK								
A	0.119	75[2]	842	7.7	634.0	634.0	635.0	1.0
B	0.205	59[2]	713	9.0	635.3	635.3	636.1	0.8
C	0.361	218	1594	4.0	637.9	637.9	638.9	1.0
D	0.385	186	1415	4.6	638.3	638.3	639.3	1.0
E	0.450	105	999	6.5	639.1	639.1	640.0	0.9
F	0.523	145	1359	4.7	640.2	640.2	641.2	1.0
G	0.598	235	2168	3.0	640.8	640.8	641.8	1.0
H	0.662	228	1976	3.3	641.0	641.0	642.0	1.0
I	0.833	129	1259	5.1	641.8	641.8	642.7	0.9
J	0.947	169	1723	3.7	643.1	643.1	644.0	0.9
K	1.104	307	1970	3.3	644.1	644.1	645.0	0.9
L	1.321	144	1357	4.8	645.3	645.3	646.2	0.9
M	1.540	83	836	7.4	647.4	647.4	648.3	0.9
N	1.718	97	1111	5.5	649.6	649.6	650.6	1.0
O	1.833	75	952	6.5	650.6	650.6	651.6	1.0
P	1.948	151	1706	3.6	651.6	651.6	652.6	1.0
Q	2.092	180	1944	3.2	652.1	652.1	653.1	1.0
R	2.227	194	1946	3.2	652.6	652.6	653.5	0.9
S	2.379	85	1045	5.8	653.2	653.2	654.1	0.9

[1]MILES ABOVE MOUTH
[2]THIS WIDTH EXTENDS INTO AREA NOT INCLUDED

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

MIDDLE FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
COLDWATER FORK								
A	1.621	117	1073	4.9	647.8	647.8	648.8	1.0
B	1.761	69	796	6.6	649.0	649.0	650.0	1.0
C	1.896	113	1054	5.0	650.7	650.7	651.7	1.0
D	2.056	141	1282	3.7	652.2	652.2	653.2	1.0
E	2.205	135	1124	4.2	653.1	653.1	654.0	0.9
F	2.385	133	1248	3.8	655.7	655.7	656.7	1.0
G	2.487	140	1352	3.5	656.2	656.2	657.2	1.0
H	2.637	138	1264	3.7	656.8	656.8	657.8	1.0
I	2.683	137	1309	3.6	657.2	657.2	658.2	1.0
J	2.715	158	1632	2.9	657.4	657.4	658.4	1.0
K	2.828	215	2001	2.2	657.9	657.9	658.9	1.0
L	2.889	257	2035	2.1	658.1	658.1	659.1	1.0
M	2.936	168	1367	3.2	658.3	658.3	659.2	0.9
N	3.026	142	1225	3.3	658.9	658.9	659.8	0.9
O	3.190	69	689	5.9	659.8	659.8	660.8	1.0
P	3.360	82	768	5.3	661.9	661.9	662.9	1.0
Q	3.526	108	979	4.2	664.1	664.1	665.0	0.9
R	3.617	123	1134	3.5	664.6	664.6	665.5	0.9
S	3.739	109	831	4.8	665.4	665.4	666.3	0.9
T	3.914	68	704	5.6	668.3	668.3	669.1	0.8
U	4.088	76	927	4.3	669.7	669.7	670.5	0.8
V	4.211	148	1494	2.6	670.5	670.5	671.4	0.9

[1]Miles above mouth

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

COLDWATER FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
COLDWATER FORK								
W	4.428	72	735	5.4	671.2	671.2	672.0	0.8
X	4.592	115	920	4.3	673.0	673.0	673.9	0.9
Y	4.836	67	710	5.6	674.9	674.9	675.8	0.9
Z	5.011	96	636	6.2	677.0	677.0	678.0	1.0
AA	5.281	60	719	4.9	681.4	681.4	682.4	1.0
AB	5.463	107	797	4.4	682.8	682.8	683.7	0.9
AC	5.555	124	917	3.8	683.8	683.8	684.7	0.9
AD	5.689	141	984	3.6	684.7	684.7	685.6	0.9
AE	5.863	114	808	4.3	685.9	685.9	686.8	0.9
AF	5.886	177	1085	3.2	686.4	686.4	687.3	0.9

[1]Miles above mouth

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

COLDWATER FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BLACKLOG FORK								
A	0.012	38	296	6.1	651.5	646.7[2]	647.7	1.0
B	0.025	60	459	3.9	651.5	648.1[2]	648.9	0.8
C	0.141	35	251	6.0	651.5	649.0[2]	649.8	0.8
D	0.304	31	237	6.3	651.9	651.9	652.7	0.8
E	0.432	29	261	5.7	654.1	654.1	654.9	0.8
F	0.641	35	298	4.7	658.9	658.9	659.8	0.9
G	0.736	53	369	3.8	659.9	659.9	660.7	0.8
H	0.822	73	487	2.9	660.5	660.5	661.3	0.8
I	0.880	55	346	4.0	660.8	660.8	661.5	0.7
J	0.958	67	307	4.5	663.9	663.9	664.3	0.4
K	1.016	33	203	6.4	665.2	665.2	665.7	0.5
L	1.059	94	434	3.0	666.5	666.5	667.5	1.0
M	1.114	46	320	4.1	667.8	667.8	668.7	0.9
N	1.196	89	531	2.4	670.1	670.1	671.1	1.0
O	1.258	83	501	2.6	671.3	671.3	672.3	1.0
P	1.343	62	410	3.0	671.7	671.7	672.6	0.9
Q	1.436	97	507	2.4	672.5	672.5	673.4	0.9
R	1.479	59	303	4.0	672.9	672.9	673.7	0.8
S	1.508	35	207	5.8	673.3	673.3	674.1	0.8
T	1.547	50	327	3.7	674.6	674.6	675.4	0.8
U	1.579	49	315	3.8	675.0	675.0	675.8	0.8
V	1.609	24	184	6.6	675.2	675.2	676.2	1.0

[1]Miles above mouth
[2]Elevations without considering backwater effect from Coldwater Fork

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BLACKLOG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BLACKLOG FORK								
W	1.704	52	293	3.9	677.1	677.1	678.0	0.9
X	1.756	36	198	5.7	677.8	677.8	678.6	0.8
Y	1.804	39	271	4.2	679.7	679.7	680.4	0.7
Z	1.915	34	161	7.0	681.5	681.5	682.0	0.5
AA	2.134	65	430	2.5	687.3	687.3	688.1	0.8
AB	2.201	105	669	1.6	687.8	687.8	688.7	0.9

[1]Miles above mouth

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BLACKLOG FORK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WHITE OAK FORK								
A	0.066	51	295	5.8	628.8	626.1[2]	627.1	1.0
B	0.130	40	248	6.9	628.8	627.7[2]	628.7	1.0
C	0.201	29	208	8.2	631.0	631.0	631.5	0.5
D	0.300	29	203	8.4	635.4	635.4	635.7	0.3
E	0.400	37	238	7.2	639.6	639.6	640.1	0.5
F	0.571	75	421	4.1	645.7	645.7	646.7	1.0
G	0.707	56	320	5.4	649.9	649.9	650.8	0.9
H	0.776	43	305	5.6	651.4	651.4	652.4	1.0
I	0.870	61	459	3.7	652.9	652.9	653.9	1.0
PIGEONROOST FORK								
A	0.187	88	1219	4.3	635.4	635.4	636.3	0.9
B	0.289	98	1523	3.4	635.9	635.9	636.8	0.9
C	0.457	202	2501	2.1	636.4	636.4	637.4	1.0
D	0.639	130	1451	3.6	636.9	636.9	637.9	1.0
E	0.775	96	1291	4.1	637.4	637.4	638.4	1.0
F	0.913	105	1378	3.8	638.1	638.1	639.1	1.0
G	1.019	58	819	6.4	639.7	639.7	640.6	0.9
H	1.222	113	1401	3.7	641.4	641.4	642.4	1.0
I	1.320	106	1213	4.3	641.9	641.9	642.9	1.0

[1]Miles above mouth
[2]Elevations without considering backwater effect from Emily Creek

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

WHITE OAK FORK – PIGEONROOST FORK

BEST COPY AVAILABLE

The area between the floodway and the 100-year flood plain boundaries is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

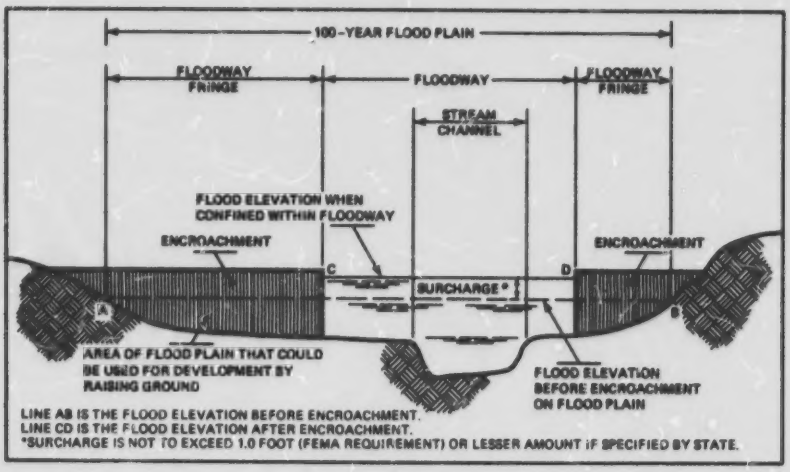

100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE *
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT.
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT.
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FIGURE 2 - Floodway Schematic

The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

5.0 INSURANCE APPLICATION

To establish actuarial insurance rates, data from the engineering study must be transformed into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail affecting Martin County.

5.1 Reach Determinations

Reaches are defined as sections of flood plain that have relatively the same flood hazard, based on the weighted average difference in water-surface elevations between the 10- and 100-year floods. This difference may not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

BEST COPY AVAILABLE

The locations of the reaches determined for the flooding sources of Martin County are shown on the Flood Profiles and are summarized in Table 4, Flood Insurance Zone Data.

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is used to establish relationships between depth and frequency of flooding in any reach. This relationship is then used with depth-damage relationships for various classes of structures to establish actuarial insurance rate tables.

The FHF for a riverine reach is the weighted average difference between the 10- and 100-year flood water-surface elevations rounded to the nearest 0.5 foot, multiplied by 10, and shown as a 3-digit code. For example, if the difference between elevations is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference is greater than 10.0 feet, it is rounded to the nearest whole foot.

5.3 Flood Insurance Zones

Flood insurance zones and zone numbers are assigned based on the type of flood hazard and the FHF, respectively. A unique zone number is associated with each possible FHF and varies from 1 for a FHF of 005 to a maximum of 30 for a FHF of 200 or greater.

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations are shown or FHFs determined.
Zones A2-A6, A9, A13, and A17:	Special Flood Hazard Areas inundated by the 100-year flood, with base flood elevations shown, and zones subdivided according to FHF.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood; areas that are protected from the 100- and 500-year floods by dike, levee, or other water control structure; or areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding; not subdivided.

BEST COPY AVAILABLE

Flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding source studied in detail in the community are shown in Table 4, Flood Insurance Zone Data.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Martin County is, for insurance purposes, the principal product of the Flood Insurance Study. This map contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines for riverine flooding sources show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. The base flood elevations and zone numbers are used by insurance agents, in conjunction with structure elevations and characteristics, to assign actuarial insurance rates to structures and contents insured under the National Flood Insurance Program.

6.0 OTHER STUDIES

Preparation of Flood Insurance Studies for Lawrence and Pike Counties, Unincorporated Areas, Kentucky, and Mingo County, Unincorporated Areas, West Virginia has begun (References 8, 13, and 14). However, work has not progressed sufficiently to date to permit a comparison with the determinations contained in this report.

Due to its more detailed analysis, this Flood Insurance Study supersedes the previously printed Flood Hazard Boundary Map for Martin County (Reference 11) and the "Special Flood Hazard Information Report" for Tug Fork (Reference 3).

7.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, 1371 Peachtree Street, N.E., Suite 736, Atlanta, Georgia, 30309.

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
CALF CREEK TRIBUTARY							
Reach 1	0023	-1.03	-0.31	0.70	010	A2	Varies—See Map
TURKEY CREEK							
Reach 1	0023	-2.01	-0.58	1.30	020	A4	Varies—See Map
Reach 2	0023,0032	-1.42	-0.41	0.77	015	A3	Varies—See Map
LONG FORK							
Reach 1	0032	-1.38	-0.45	0.99	015	A3	Varies—See Map
BUCK CREEK							
Reach 1	0054	-2.38	-0.69	1.39	025	A5	Varies—See Map
RIGHT FORK BUCK CREEK							
Reach 1	0053,0054	-2.38	-0.69	1.39	025	A5	Varies—See Map

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

CALF CREEK TRIBUTARY—TURKEY CREEK—LONG FORK—BUCK CREEK —RIGHT FORK BUCK CREEK

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
EMILY CREEK							
REACH 1	0062,0064	−2.98	−0.88	1.86	030	A6	VARIES—SEE MAP
WOLF CREEK							
REACH 1	0061,0062,0063, 0064	−6.6	−2.08	3.38	065	A13	VARIES—SEE MAP
REACH 2	0061,0063	−4.49	−1.26	2.59	045	A9	VARIES—SEE MAP
TUG FORK							
REACH 1	0021,0023,0024, 0052,0054,0062, 0071,0073,0074, 0117	−8.73	−2.25	4.63	085	A17	VARIES—SEE MAP
ROCKHOUSE FORK							
REACH 1	0031	−2.59	−0.75	1.45	025	A5	VARIES—SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

EMILY CREEK—WOLF CREEK—COLLINS CREEK— TUG FORK—ROCKHOUSE FORK

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
MIDDLE FORK							
Reach 1	0032,0034	-2.90	-0.75	1.53	030	A6	Varies—See Map
COLDWATER FORK							
Reach 1	0032,0034, 0042	-3.00	-0.76	1.48	030	A6	Varies—See Map
BLACKLOG FORK							
Reach 1	0034	-2.01	-0.57	1.13	020	A4	Varies—See Map
Reach 2	0034,0053	-1.48	-0.41	0.91	015	A3	Varies—See Map
WHITE OAK FORK							
Reach 1	0064	-1.72	-0.49	1.09	015	A3	Varies—See Map
PIGEONROOST FORK							
Reach 1	0063	-4.52	-1.35	3.20	045	A9	Varies—See Map

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

MIDDLE FORK — COLDWATER FORK — BLACKLOG FORK — WHITE OAK FORK — PIGEONROOST FORK

BEST COPY AVAILABLE

8.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Kentucky, Washington, D.C., February 1982.

2. U.S. Army Corps of Engineers, Huntington District, unpublished data.

3. ————, Special Flood Hazard Information Report, Tug Fork of Big Sandy River, November 1978.

4. ————, Huntington District, Statistical Methods of Hydrology, Leo R. Beard, January 1962.

5. U.S. Water Resources Council, Bulletin No. 17, Guidelines for Determining Flood Flow Frequency, March 1976.

6. Henderson Aerial Surveys, Strip Mapping, July 1981.

7. L. Robert Kimball Consulting Engineers, Aerial Photography, Ground Control, and Orthophoto Mapping, April 1974.

8. Federal Emergency Management Agency, Type 15 Flood Insurance Study, Lawrence County, Unincorporated Areas, Kentucky, in progress.

9. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles Generalized Computer Program, Davis, California, November 1973.

10. ————, Huntington District, Topographic Maps Compiled from Aerial Photographs, Scale 1:2400, Contour Interval 5 feet: Martin County, Kentucky, December 1979.

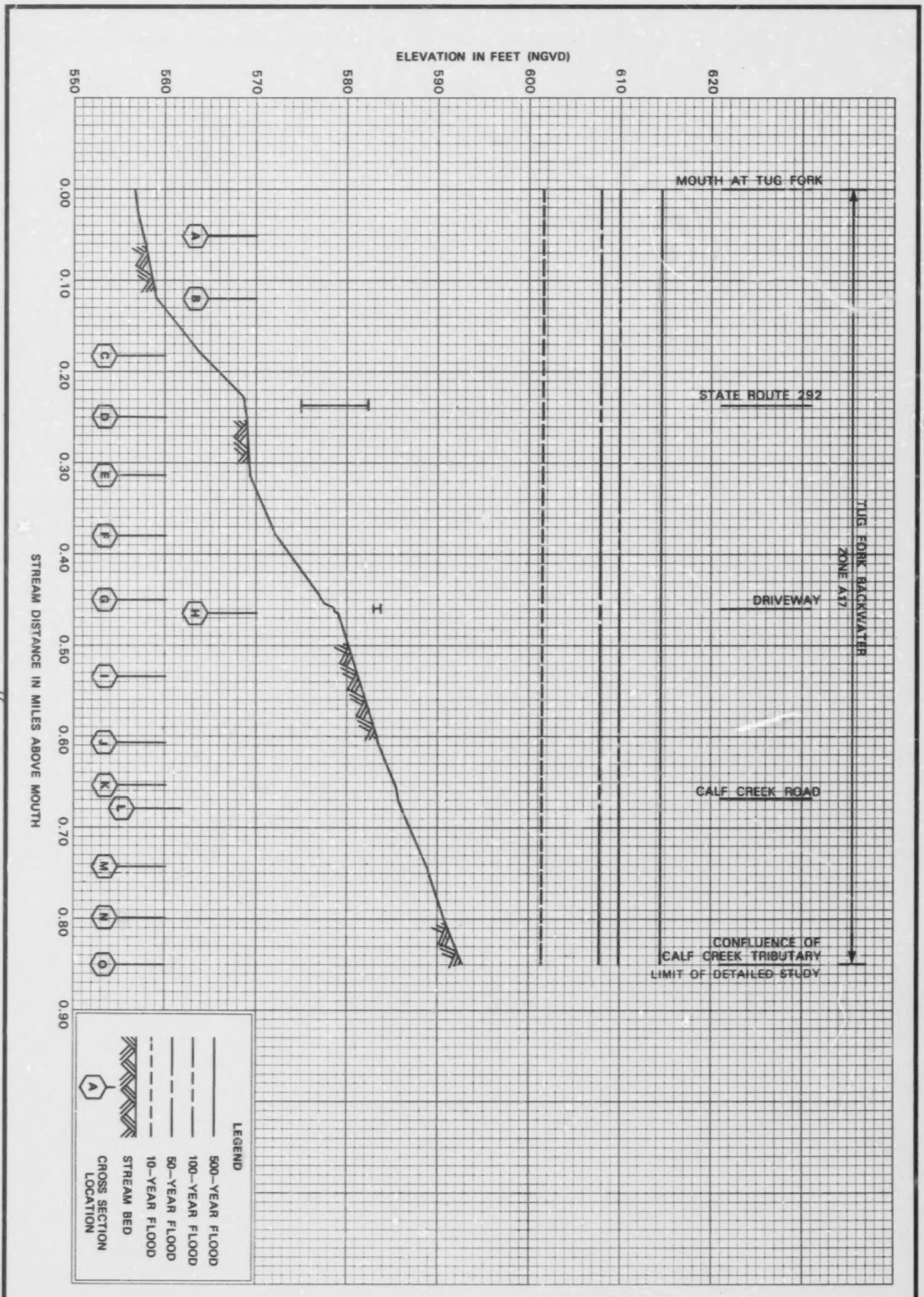
11. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Martin County, Unincorporated Areas, Kentucky, December 1977.

12. U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:24000, Contour Interval 40 feet: Inez, Kentucky, 1978.

13. Federal Emergency Management Agency, Type 15 Flood Insurance Study, Pike County, Unincorporated Areas, Kentucky, in progress.

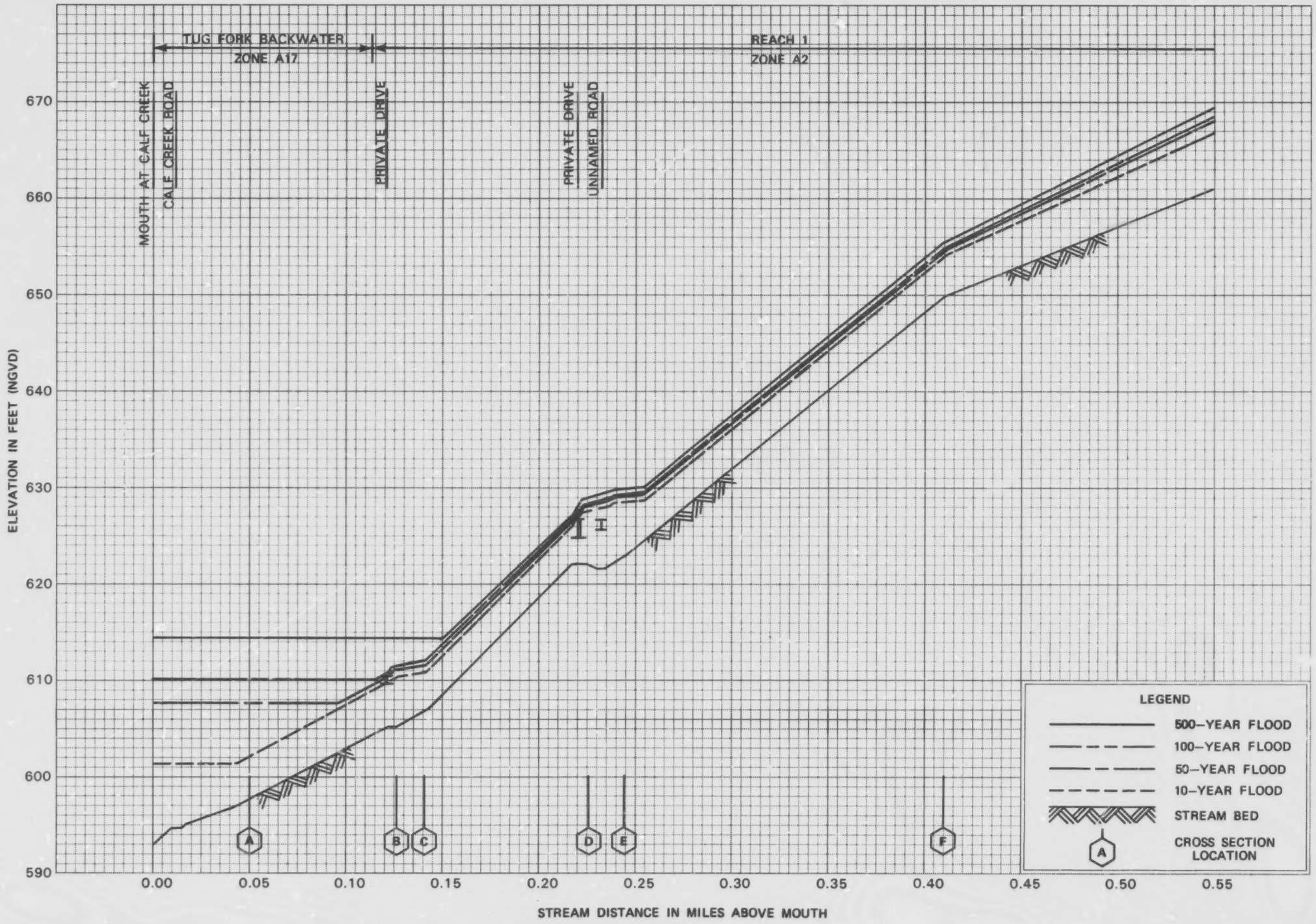
14. ————, Type 15 Flood Insurance Study, Mingo County, Unincorporated Areas, West Virginia, in progress.

BEST COPY AVAILABLE



01P	FEDERAL EMERGENCY MANAGEMENT AGENCY **MARTIN COUNTY, KY** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **CALF CREEK**

BEST COPY AVAILABLE



FLOOD PROFILES

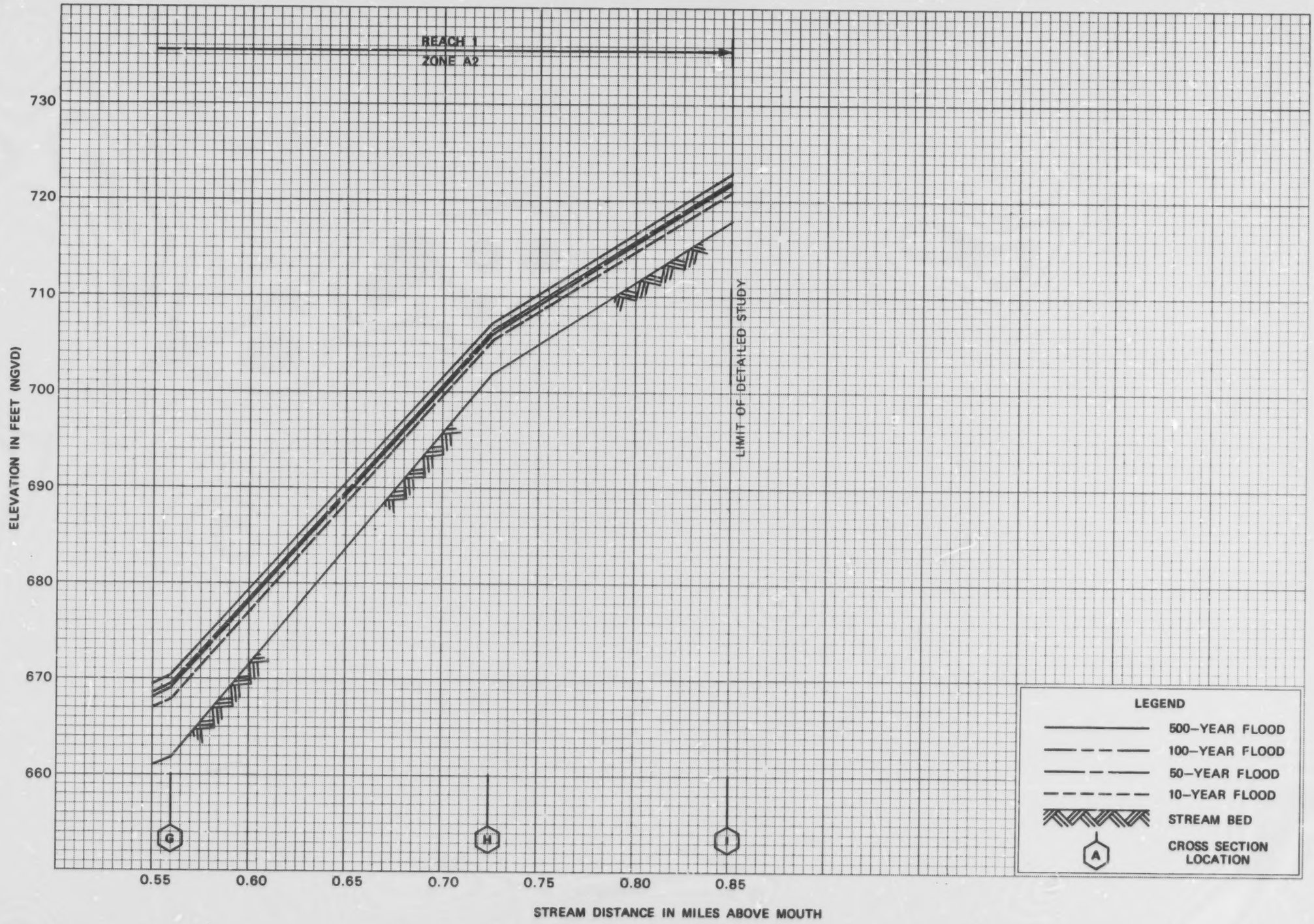
CALF CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

02P

BEST COPY AVAILABLE



FLOOD PROFILES

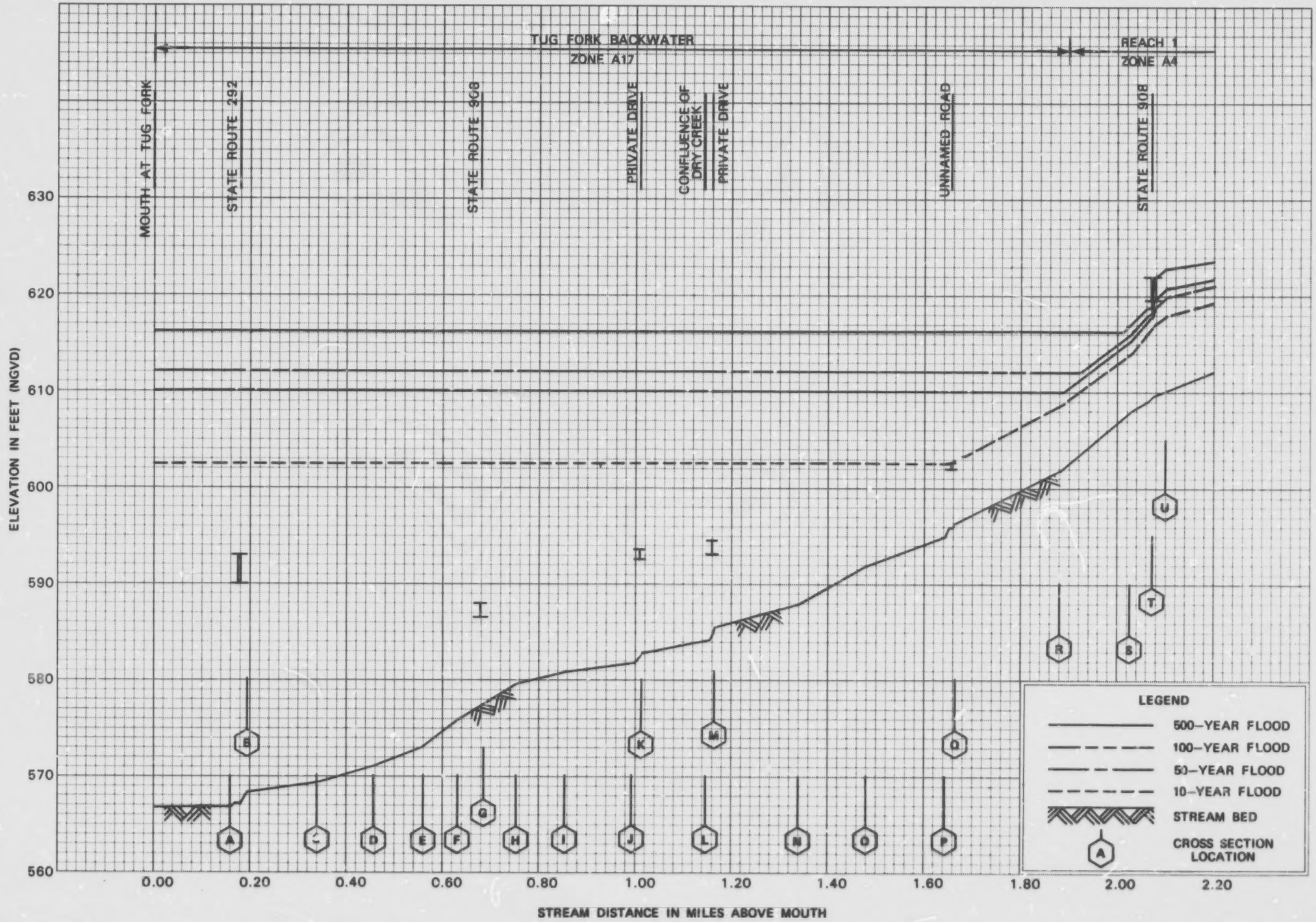
CALF CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

03P

BEST COPY AVAILABLE



FLOOD PROFILES

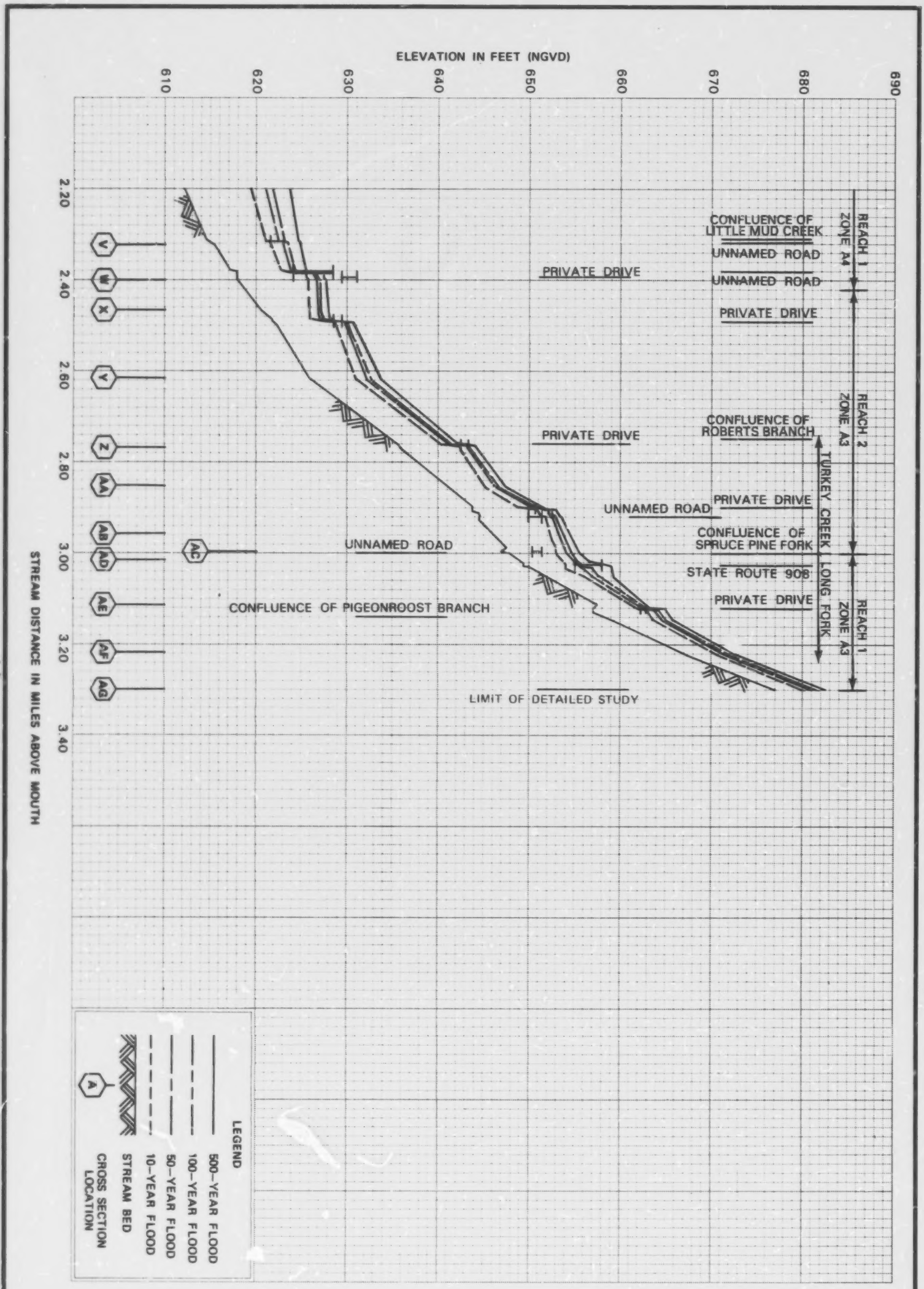
TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

04P

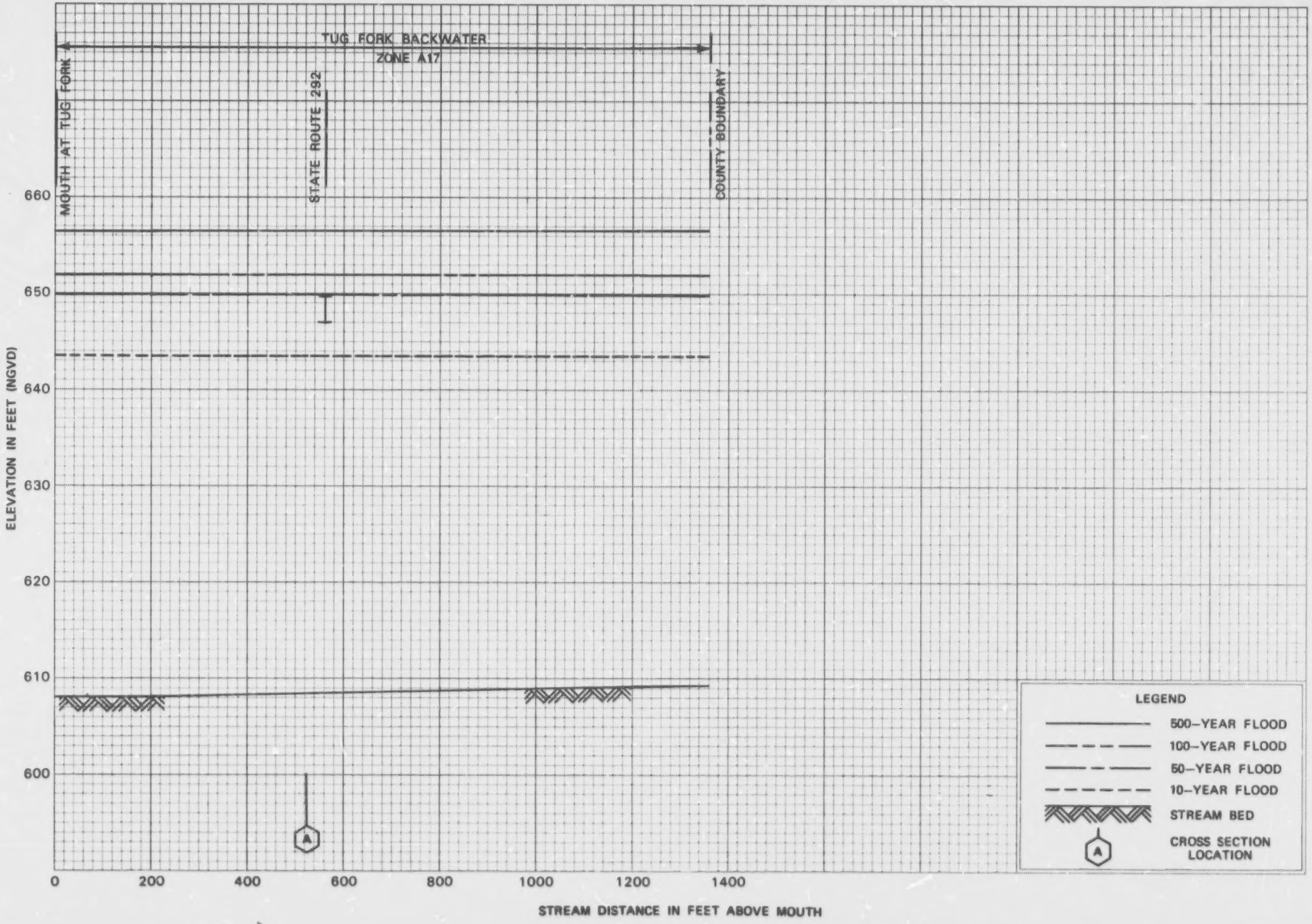
BEST COPY AVAILABLE



50

05P	FEDERAL EMERGENCY MANAGEMENT AGENCY **MARTIN COUNTY, KY** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TURKEY CREEK—LONG FORK**

BEST COPY AVAILABLE



FLOOD PROFILES

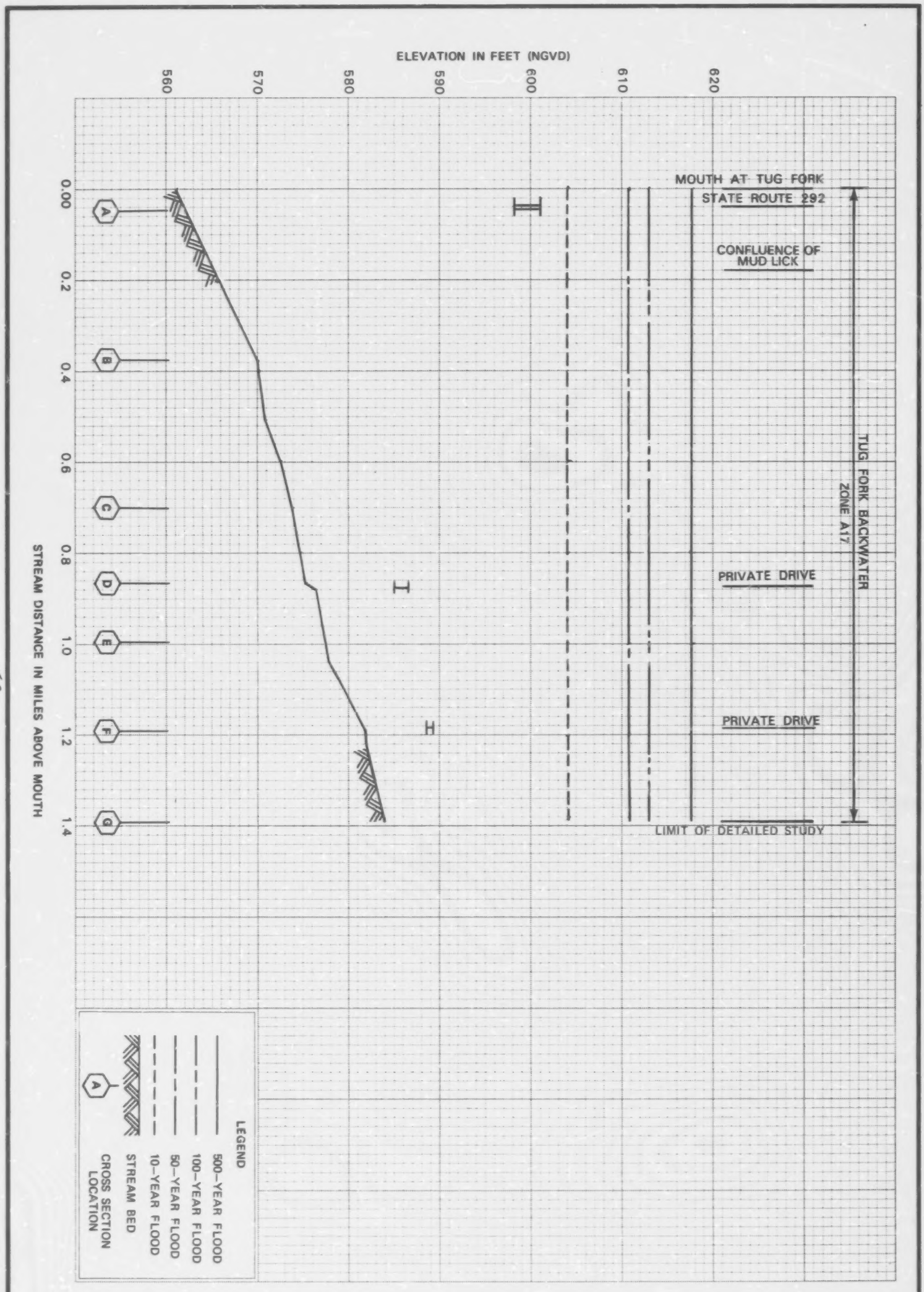
BIG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

06P

BEST COPY AVAILABLE



07P	FEDERAL EMERGENCY MANAGEMENT AGENCY **MARTIN COUNTY, KY** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **BIG ELK CREEK**

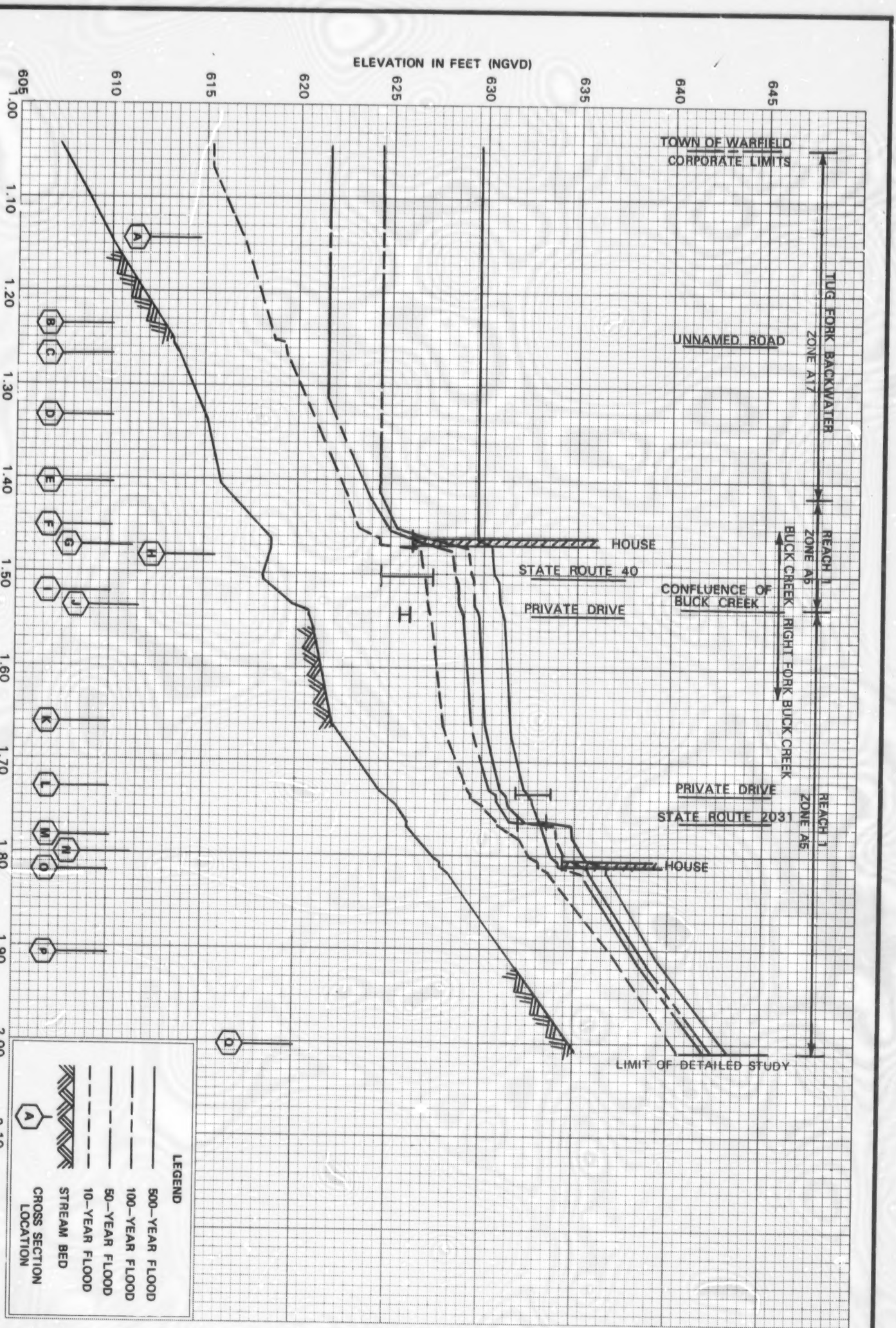
52

BEST COPY AVAILABLE

BLANK PAGE

BLANK PAGE

BLANK PAGE



FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

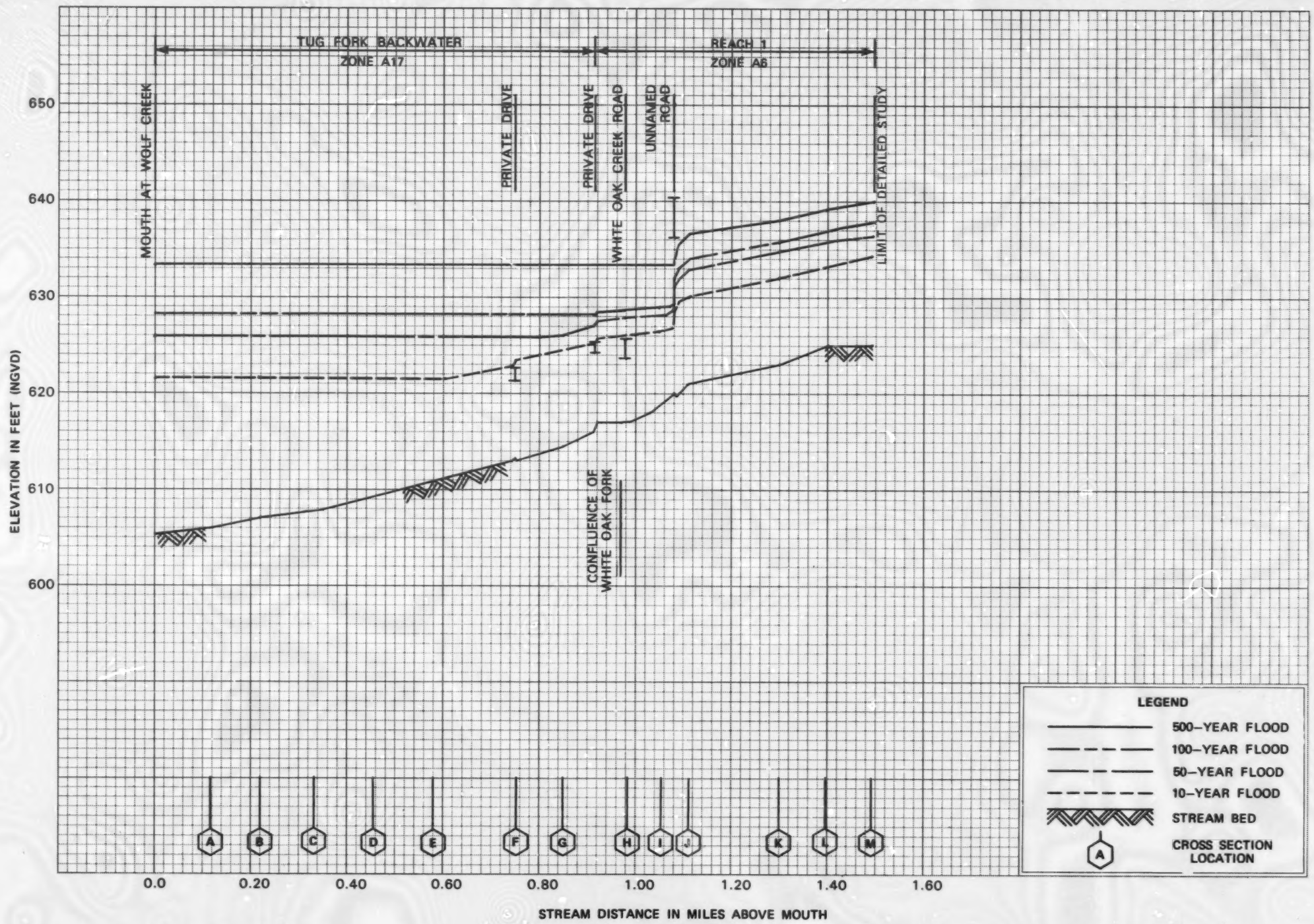
FLOOD PROFILES

BUCK CREEK—RIGHT FORK BUCK CREEK

08P

53

BEST COPY AVAILABLE



FLOOD PROFILES

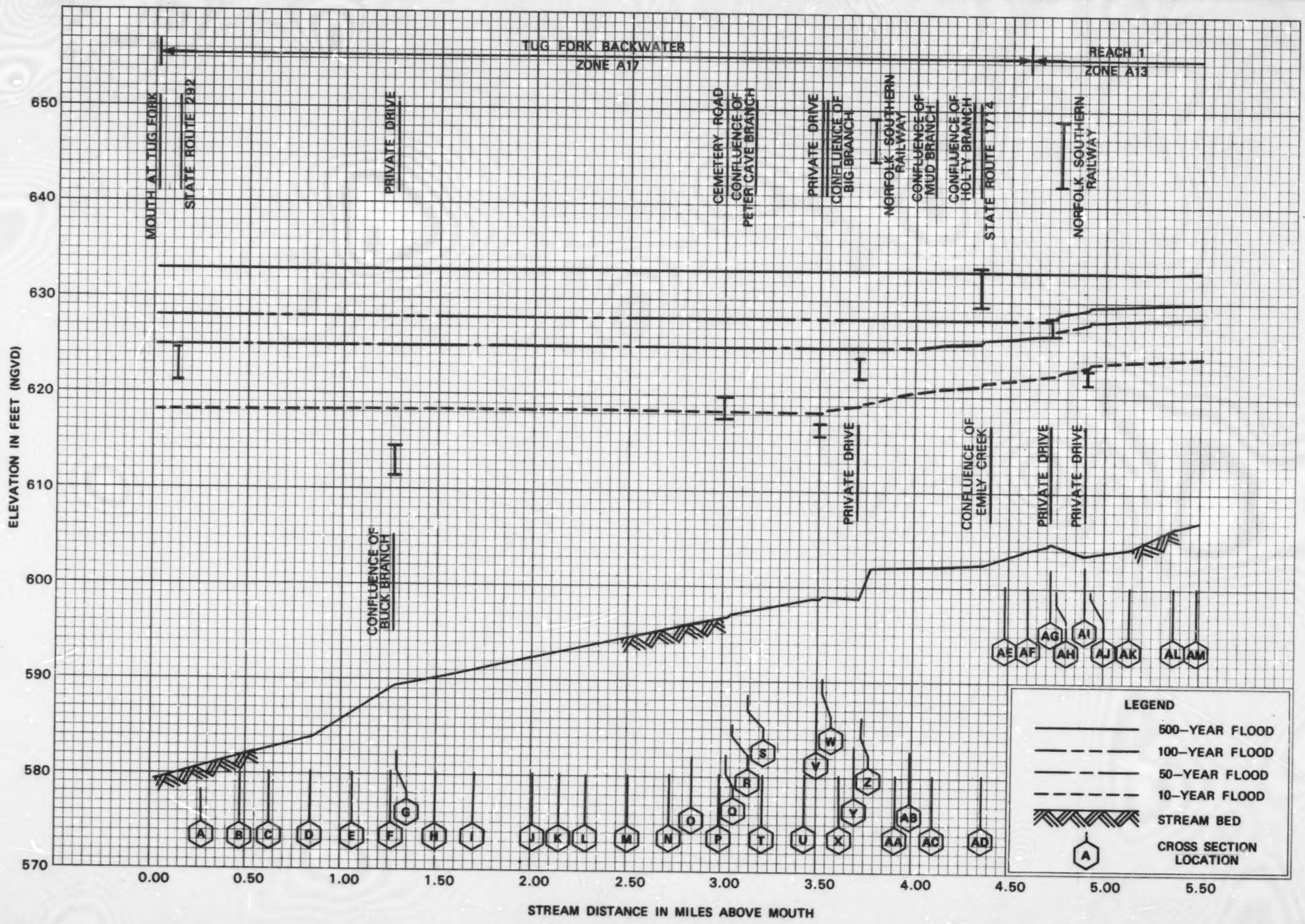
EMILY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

09P

BEST COPY AVAILABLE



FLOOD PROFILES

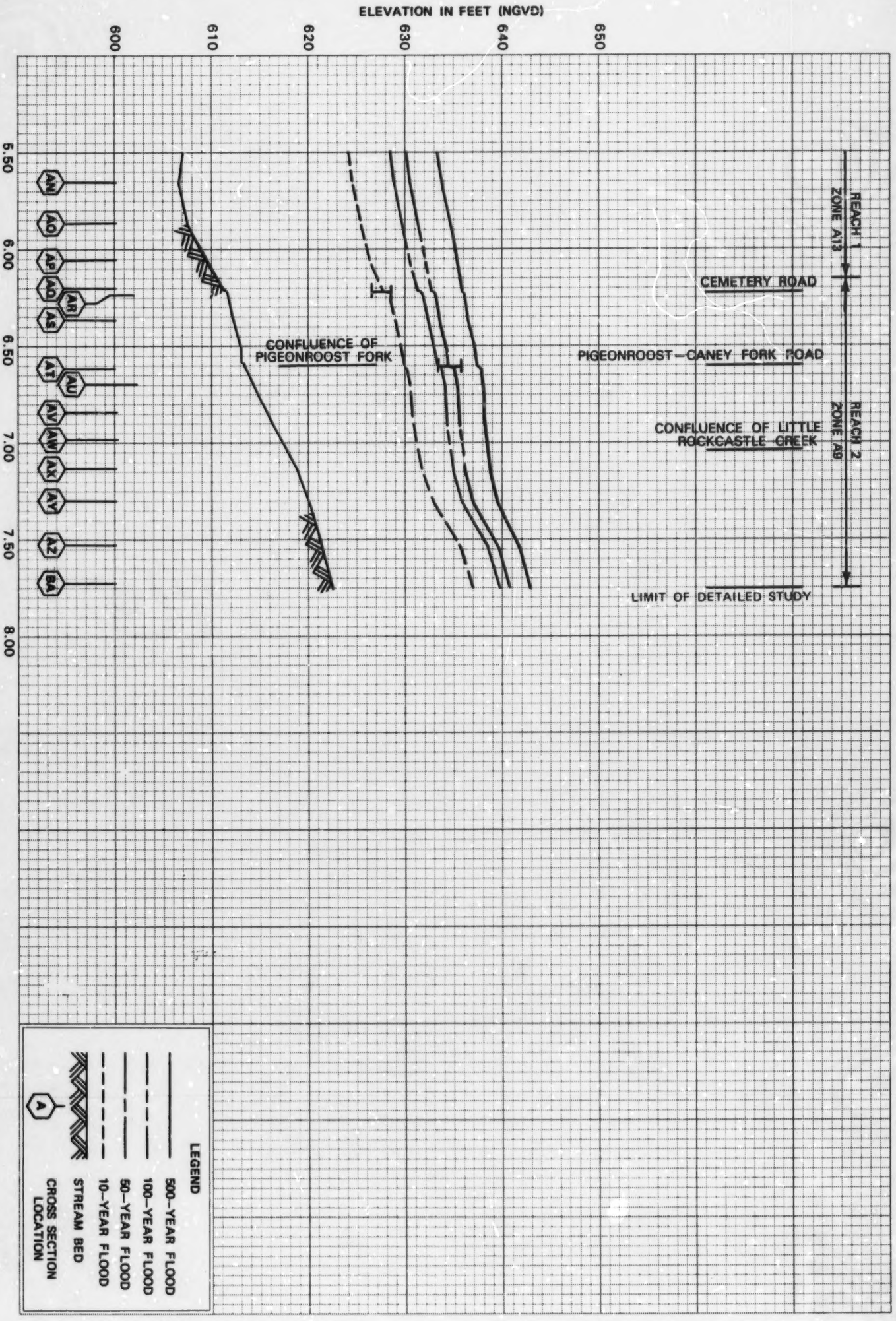
WOLF CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

10P

BEST COPY AVAILABLE



11P

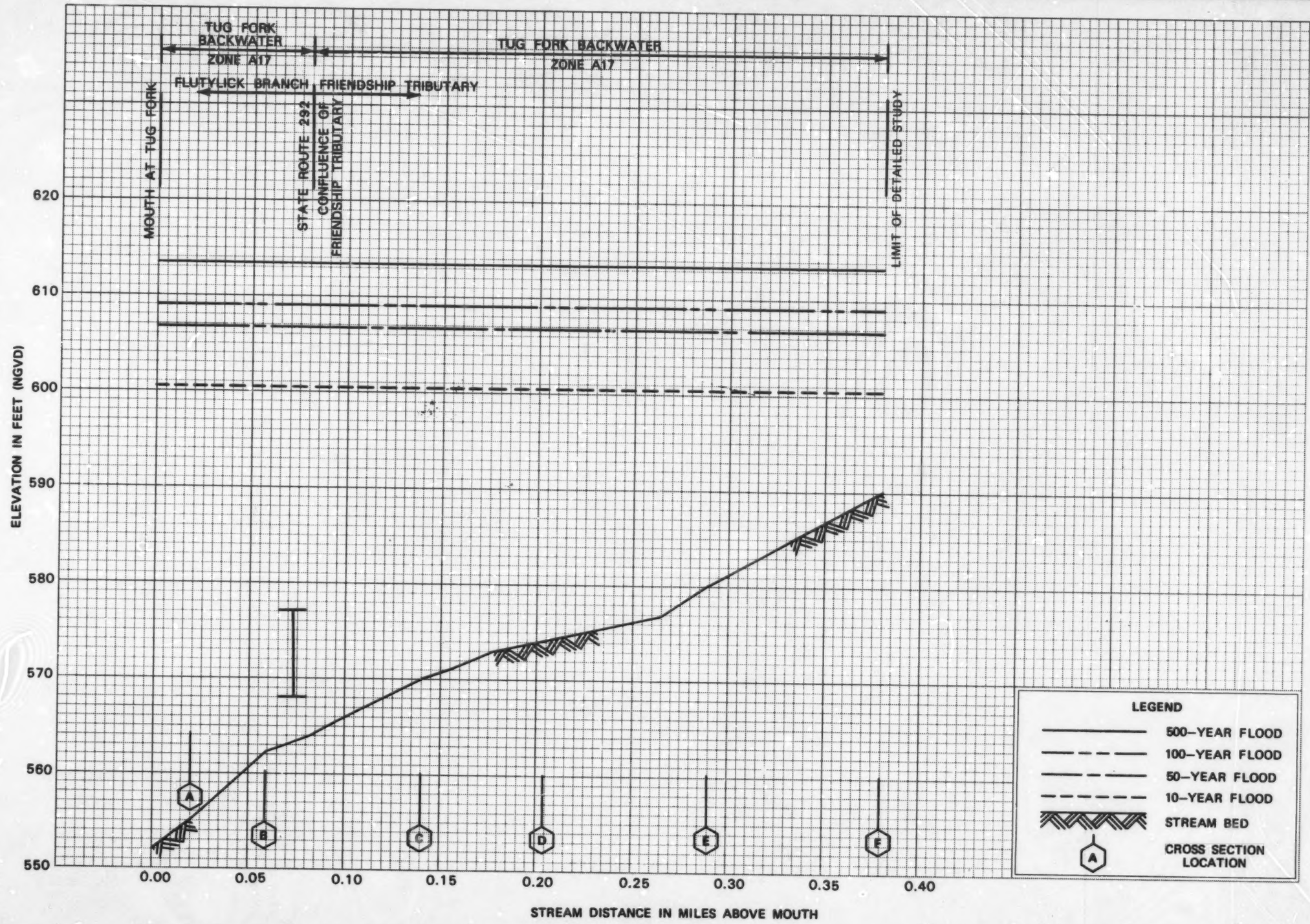
FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD PROFILES

WOLF CREEK

BEST COPY AVAILABLE



FLOOD PROFILES

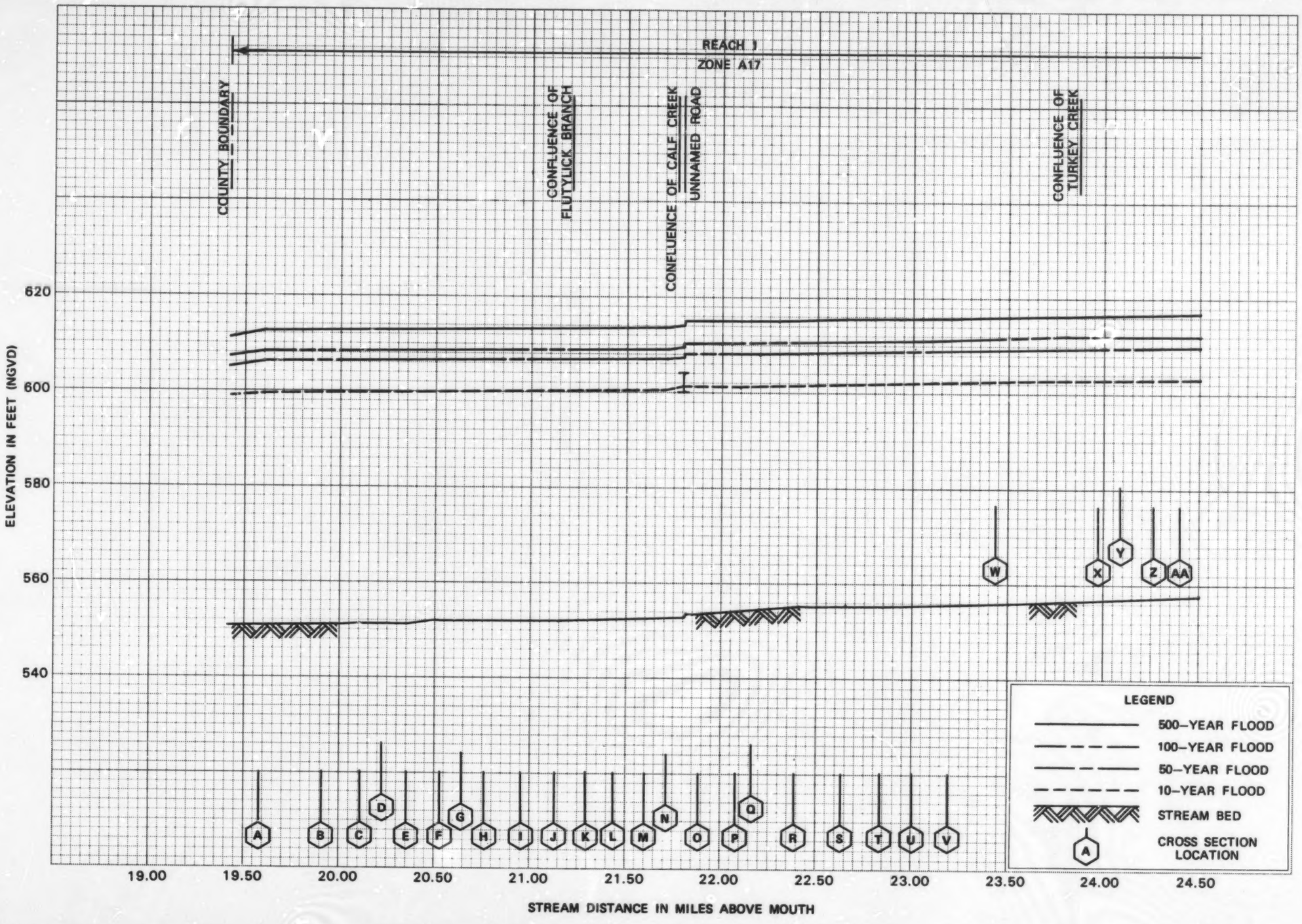
FLUTYLICK BRANCH — FRIENDSHIP TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

12P

BEST COPY AVAILABLE



FLOOD PROFILES

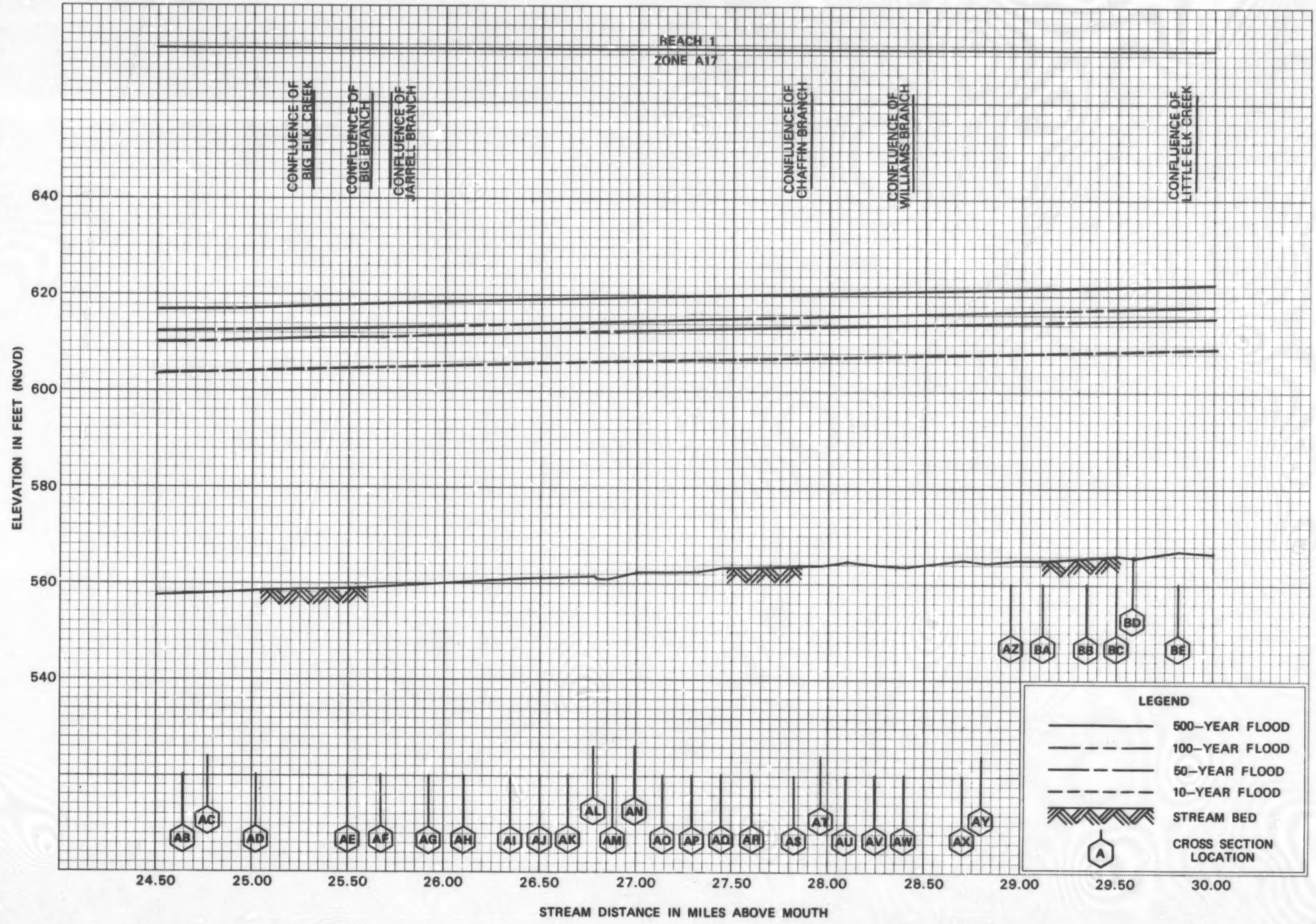
TUG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

13P

BEST COPY AVAILABLE


REACH 1
ZONE A17
CONFLUENCE OF BIG ELK CREEK
CONFLUENCE OF BIG BRANCH
CONFLUENCE OF JARRELL BRANCH
CONFLUENCE OF CHAFFIN BRANCH
CONFLUENCE OF WILLIAMS BRANCH
CONFLUENCE OF LITTLE ELK CREEK
ELEVATION IN FEET (NGVD)
640
620
600
580
560
540
AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE
24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 28.50 29.00 29.50 30.00
STREAM DISTANCE IN MILES ABOVE MOUTH
LEGEND
500–YEAR FLOOD
100–YEAR FLOOD
50–YEAR FLOOD
10–YEAR FLOOD
STREAM BED
A
CROSS SECTION LOCATION

FLOOD PROFILES

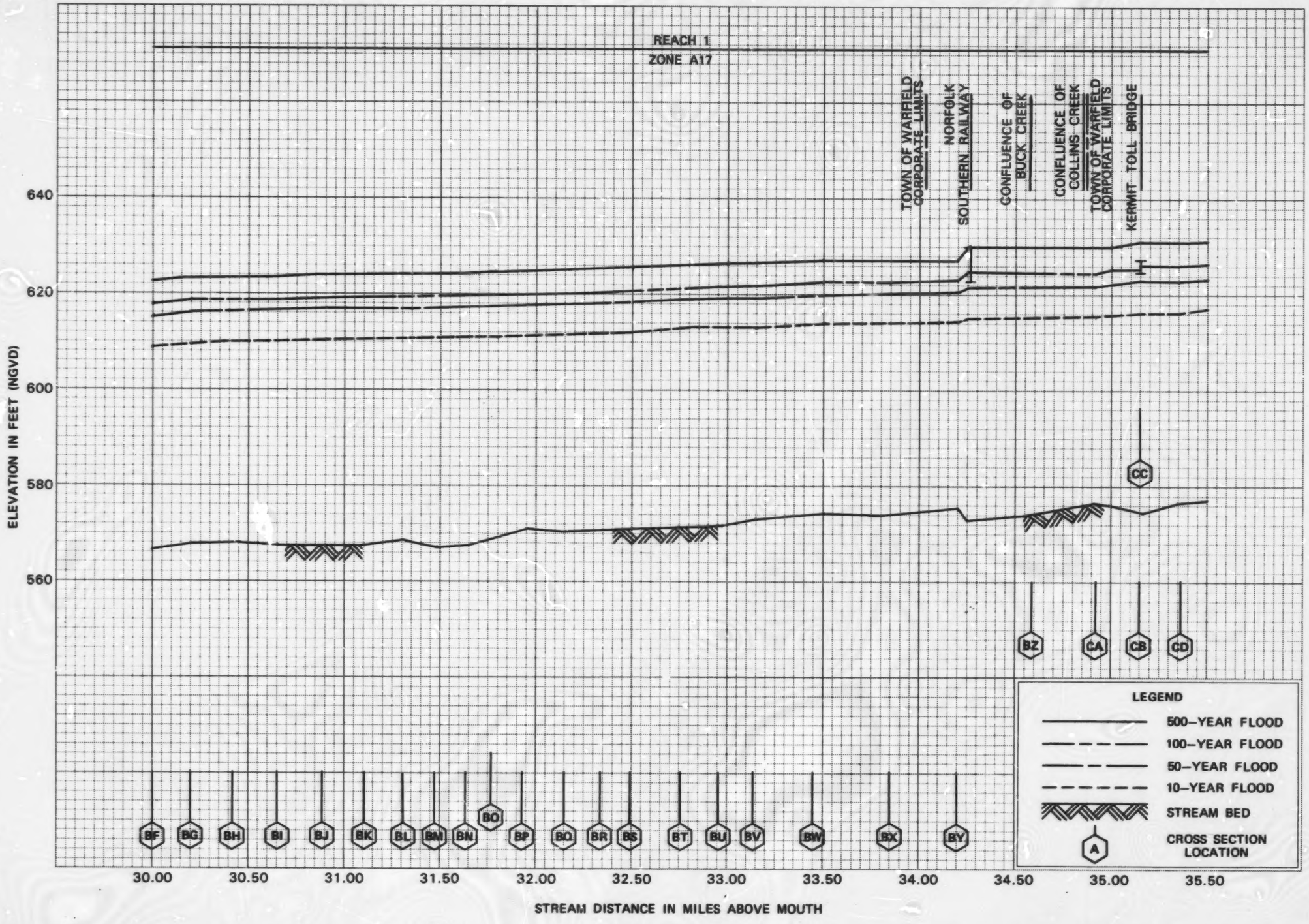
TUG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

14P

BEST COPY AVAILABLE



FLOOD PROFILES

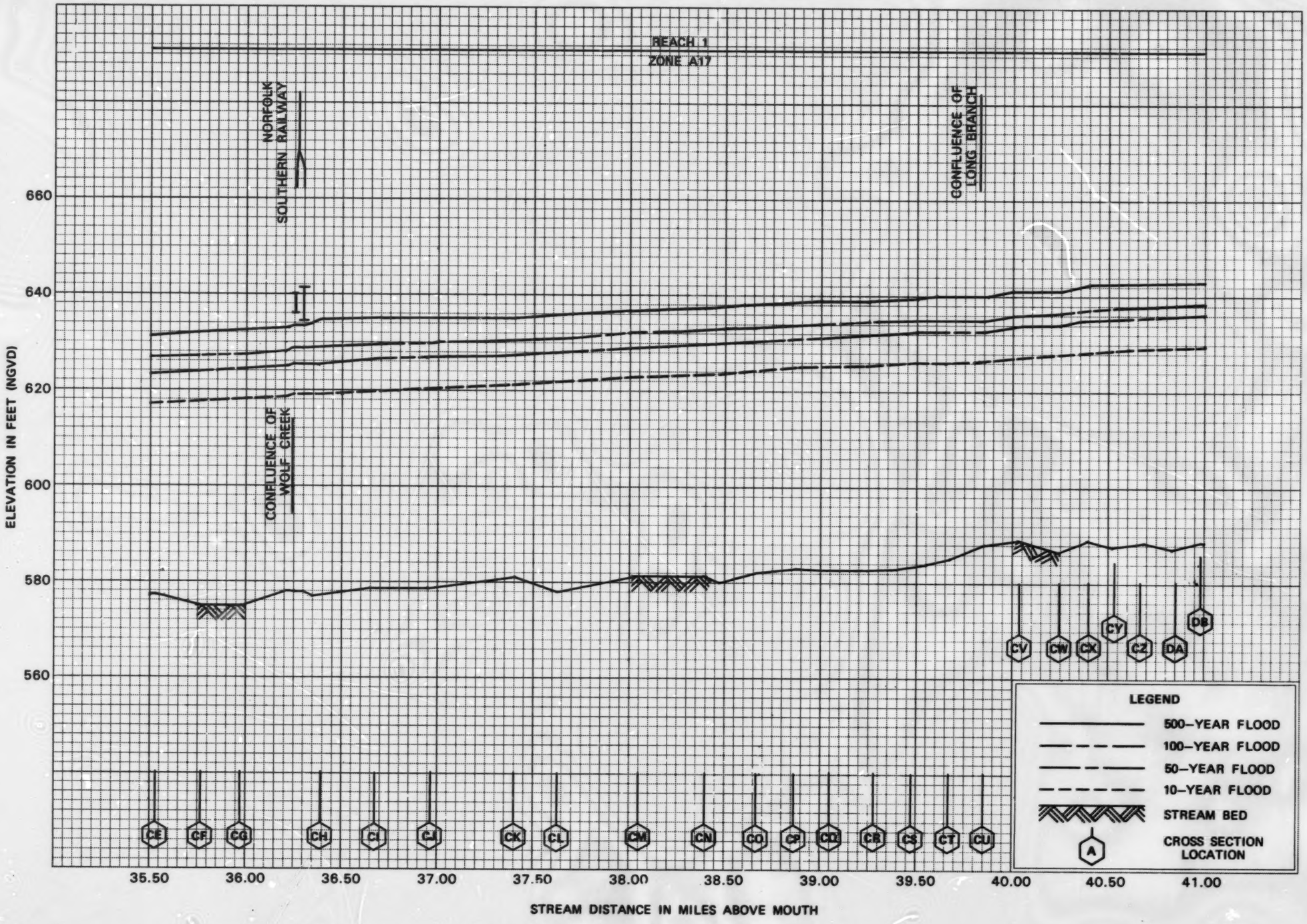
TUG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

15P

BEST COPY AVAILABLE



FLOOD PROFILES

TUG FORK

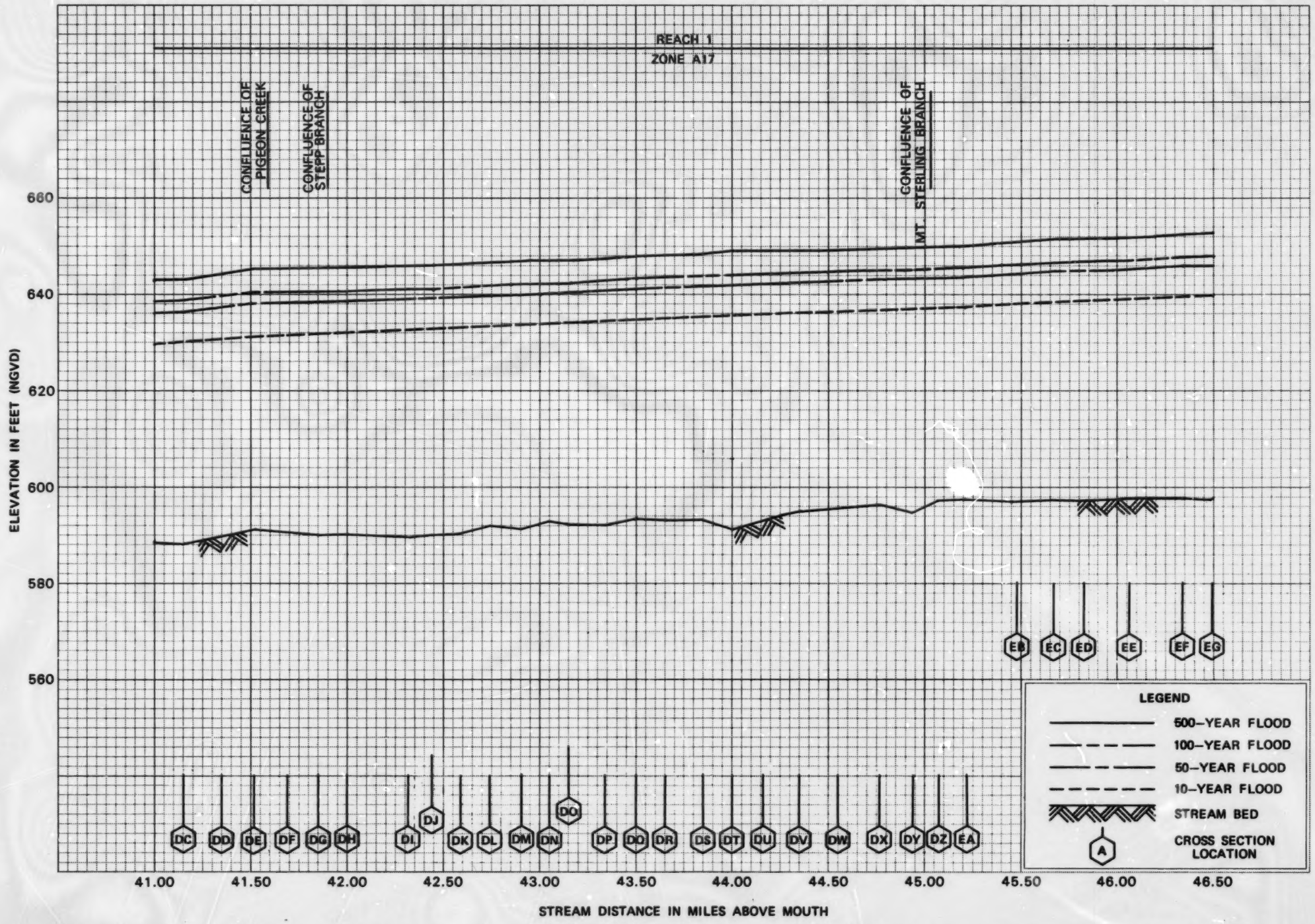
FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY

(UNINCORPORATED AREAS)

16P

BEST COPY AVAILABLE



FLOOD PROFILES

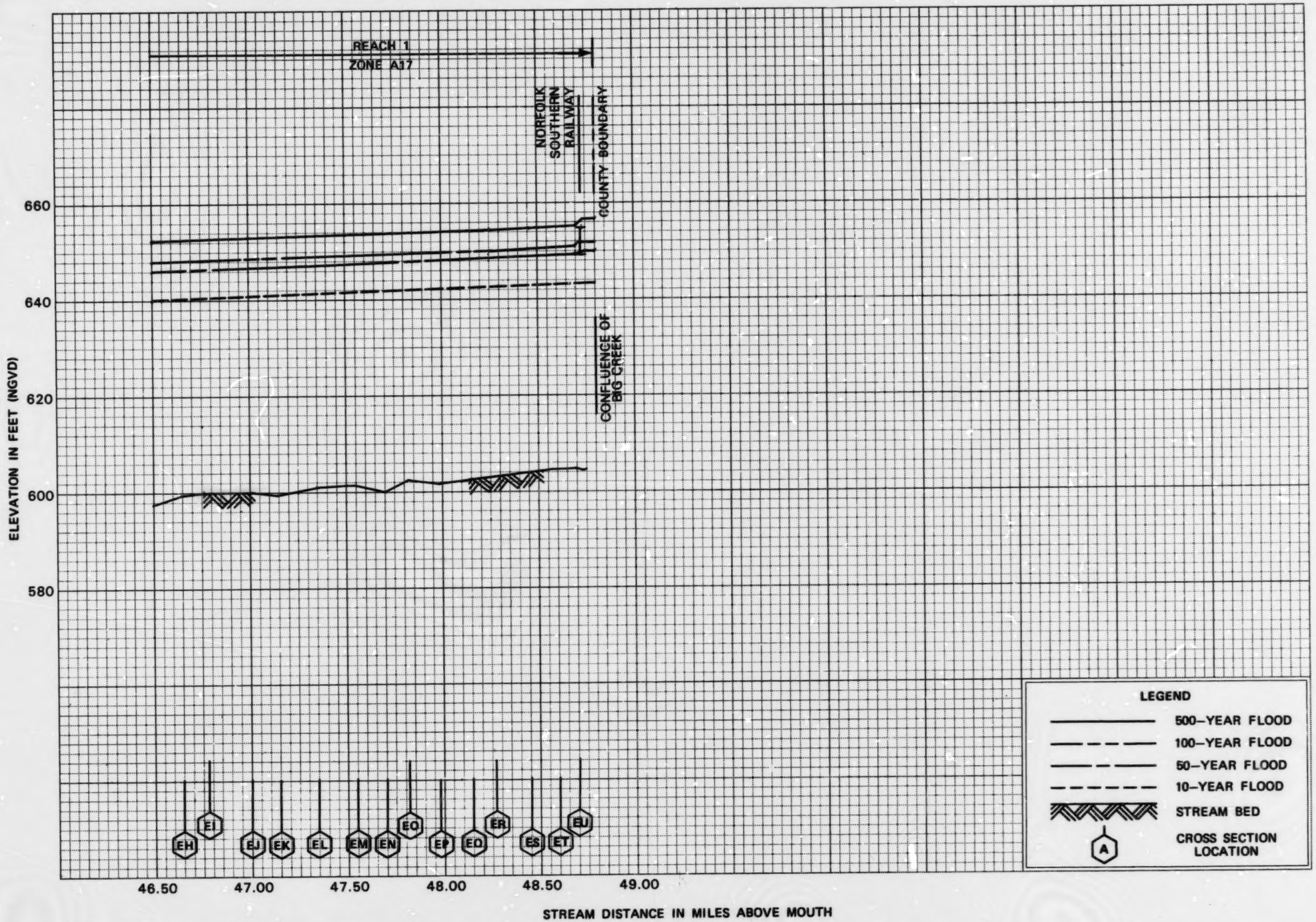
TUG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

17P

BEST COPY AVAILABLE



FLOOD PROFILES

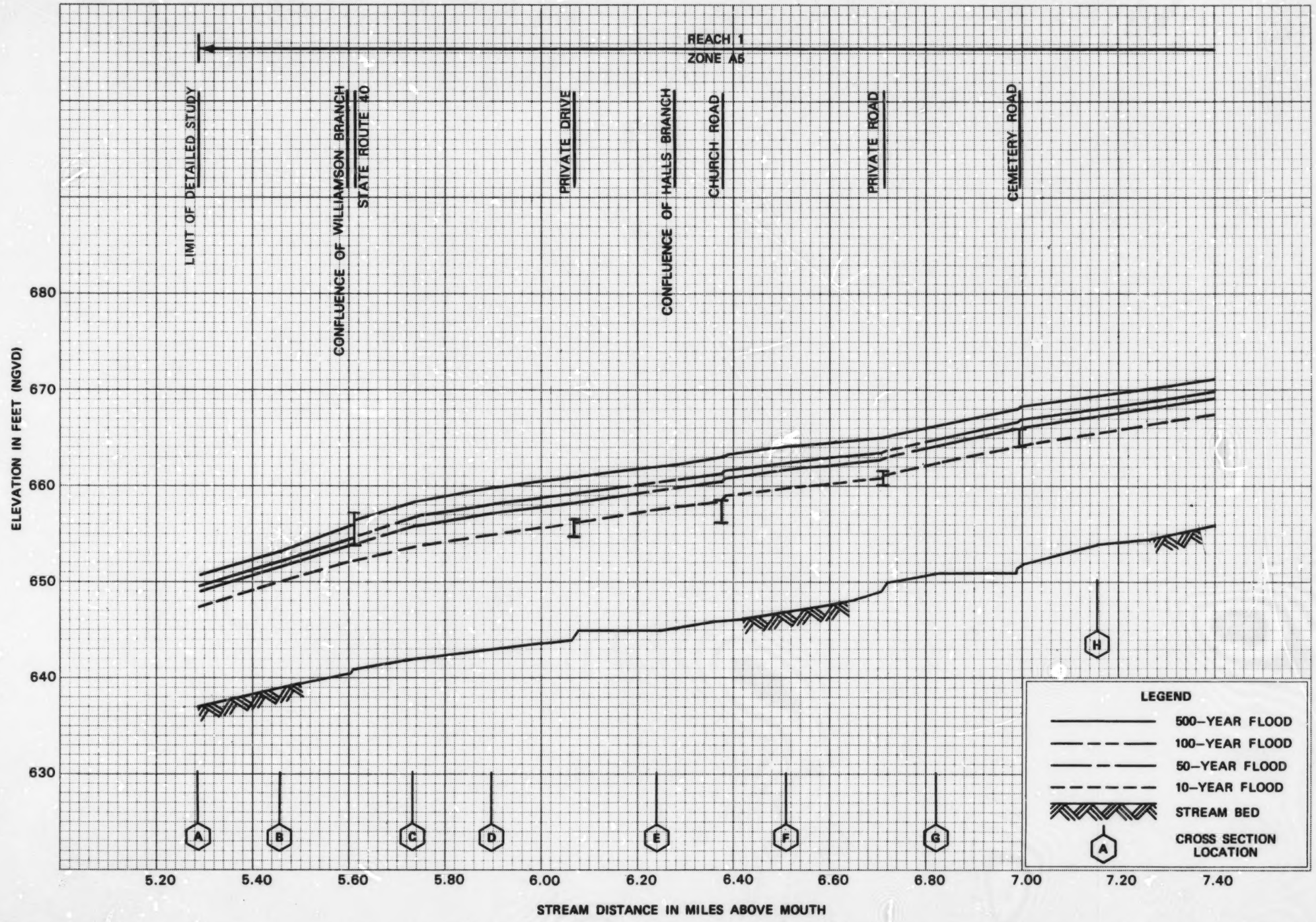
TUG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

18P

BEST COPY AVAILABLE



FLOOD PROFILES

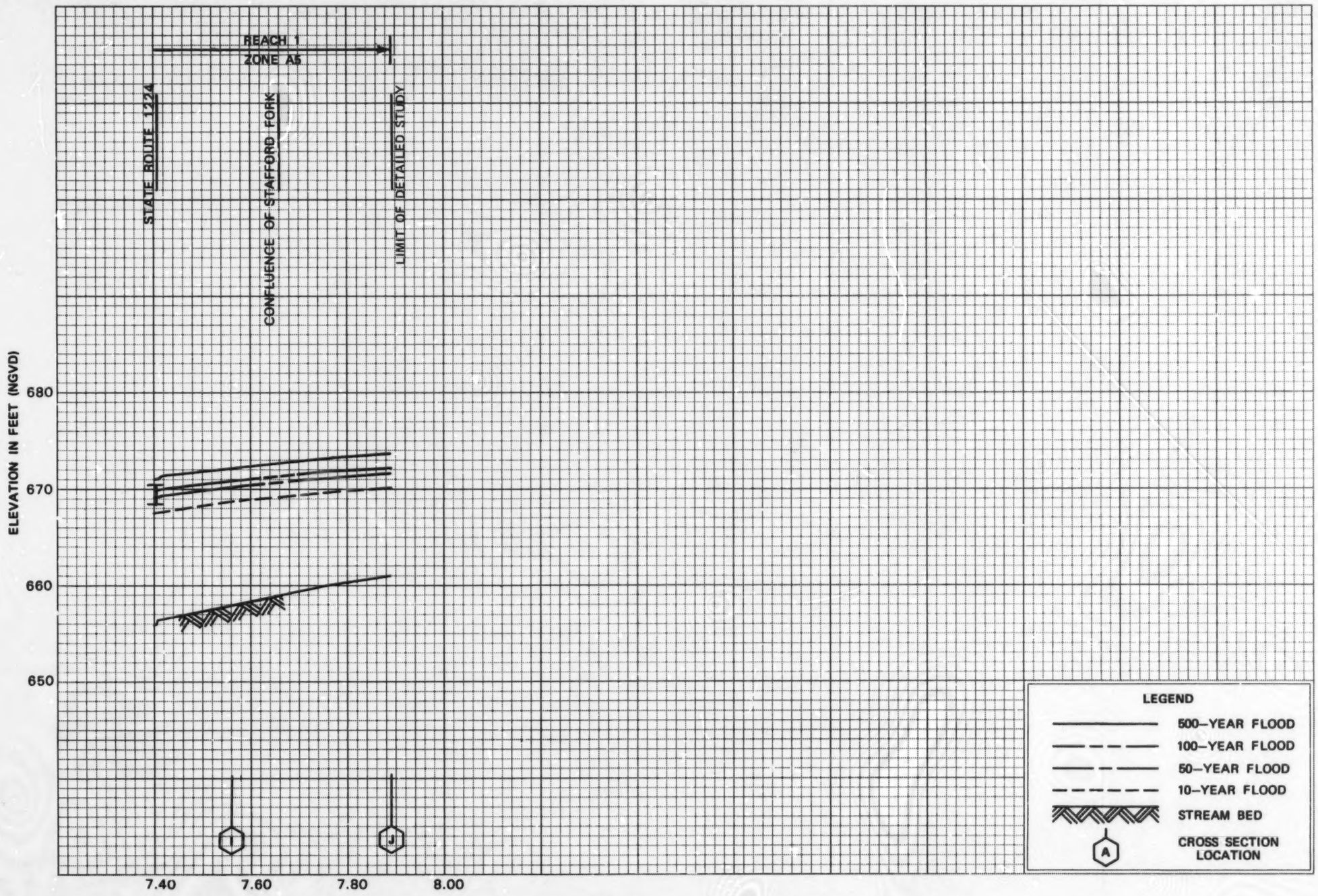
ROCKHOUSE FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

19P

BEST COPY AVAILABLE



FLOOD PROFILES

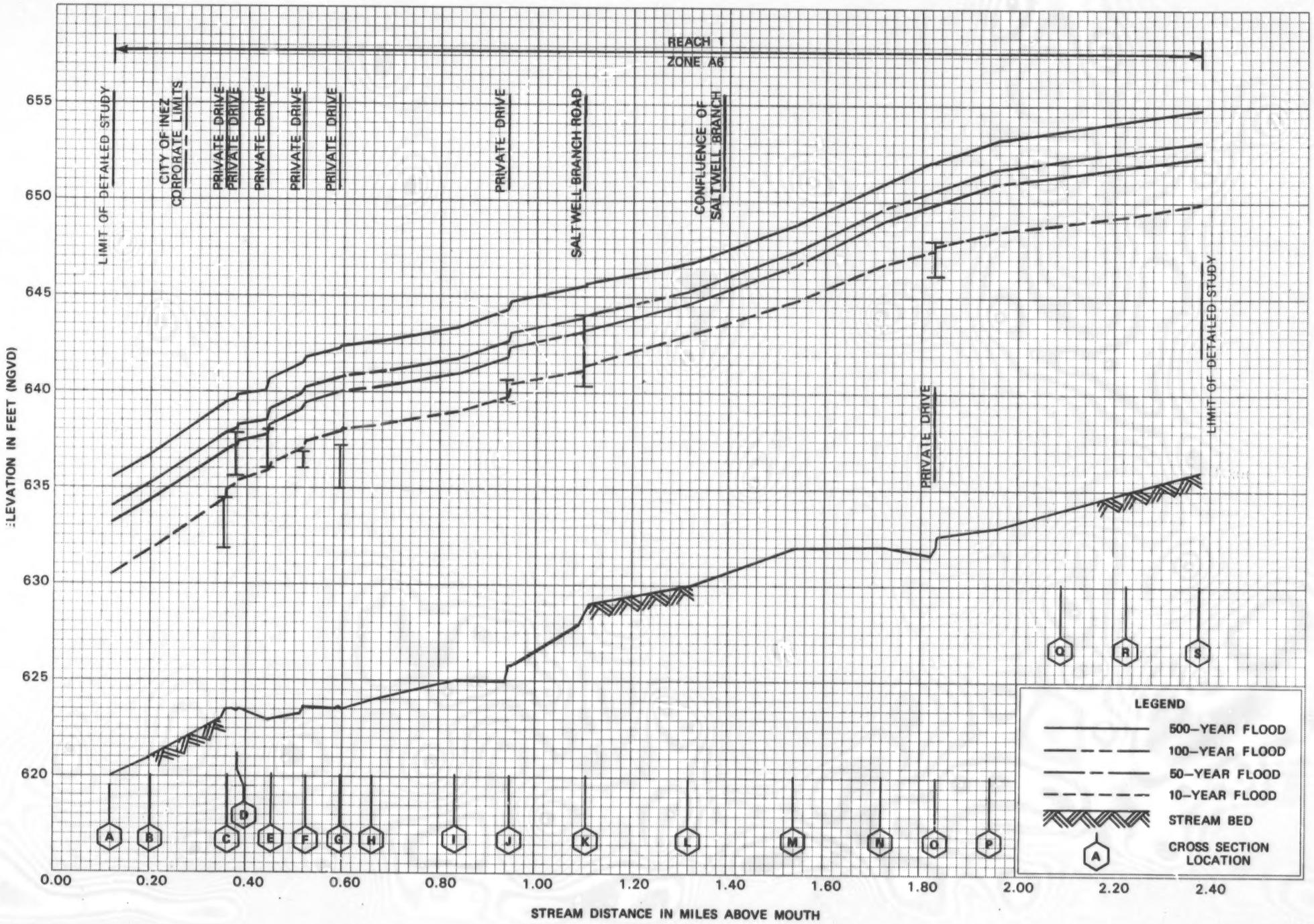
ROCKHOUSE FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

20P

BEST COPY AVAILABLE



FLOOD PROFILES

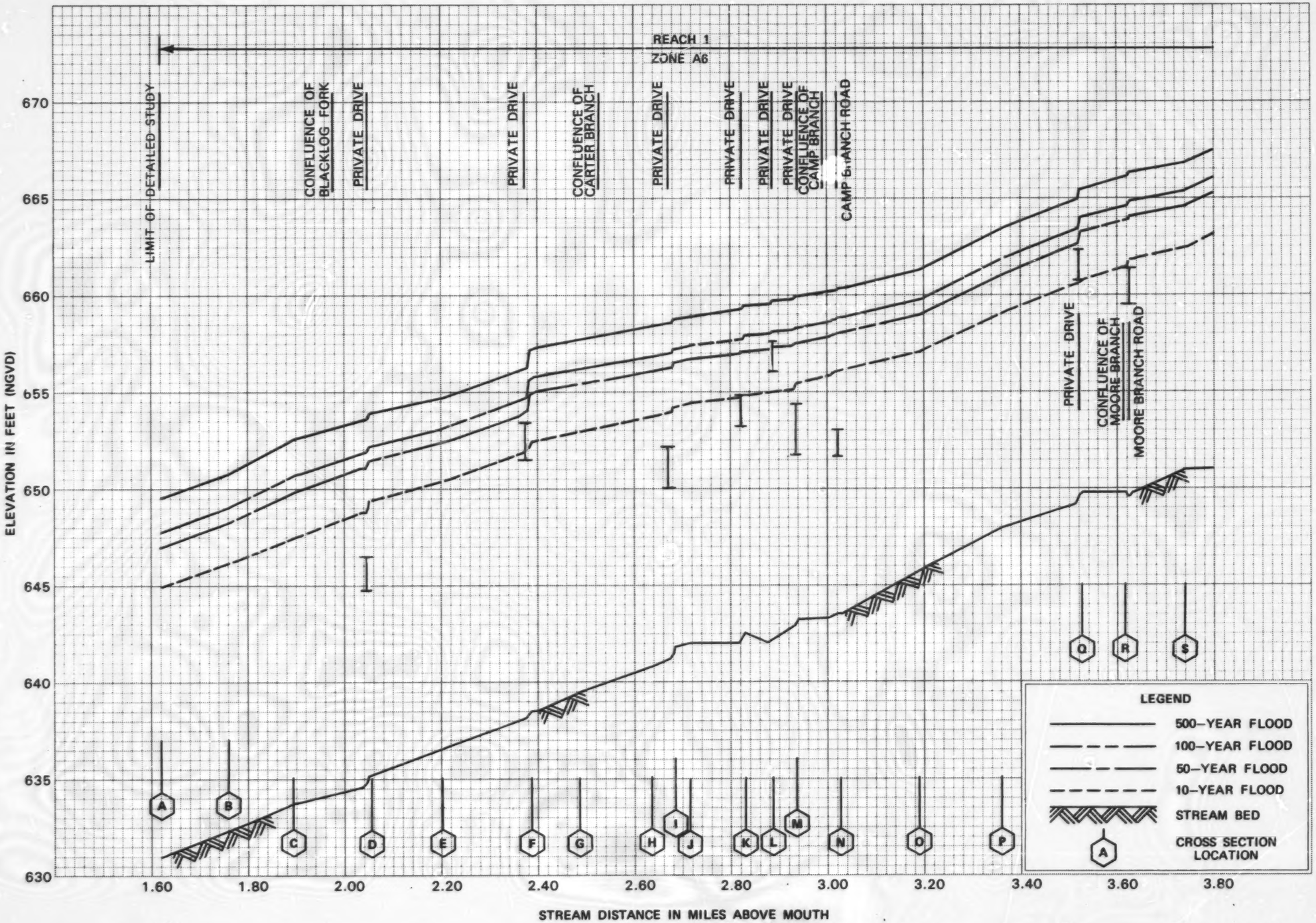
MIDDLE FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

21P

BEST COPY AVAILABLE



FLOOD PROFILES

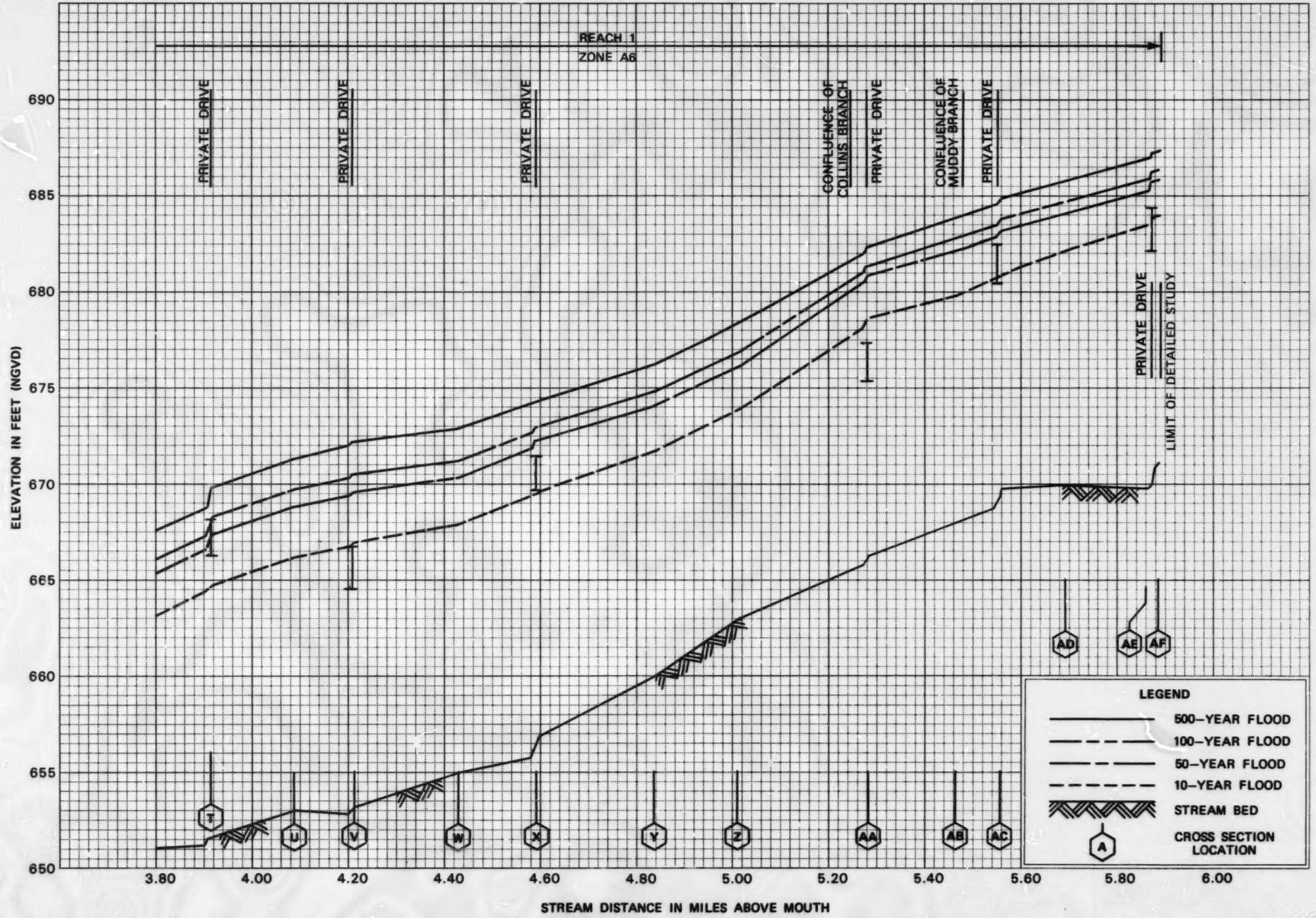
COLDWATER FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

22P

BEST COPY AVAILABLE



FLOOD PROFILES

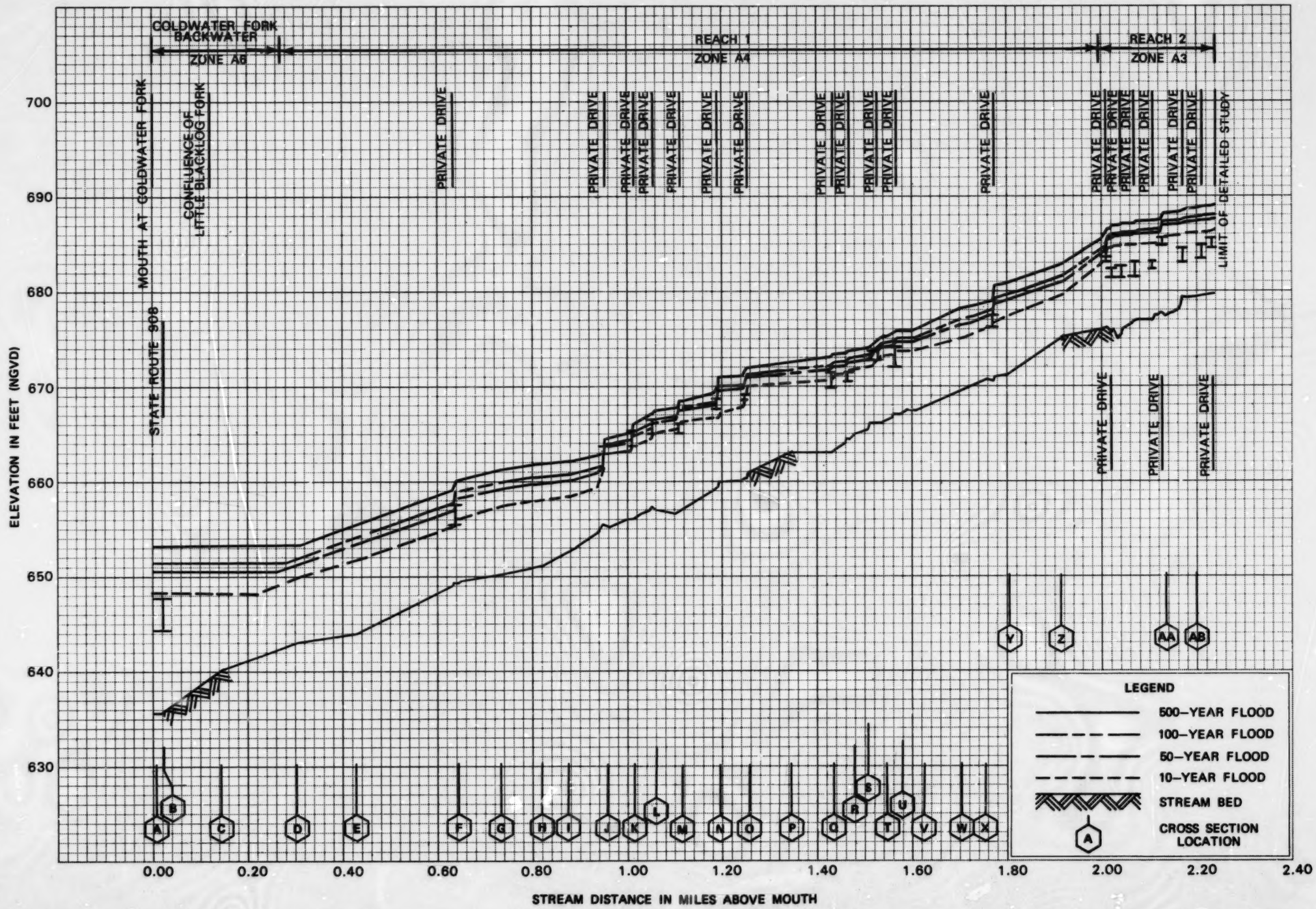
COLDWATER FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

23P

BEST COPY AVAILABLE



FLOOD PROFILES

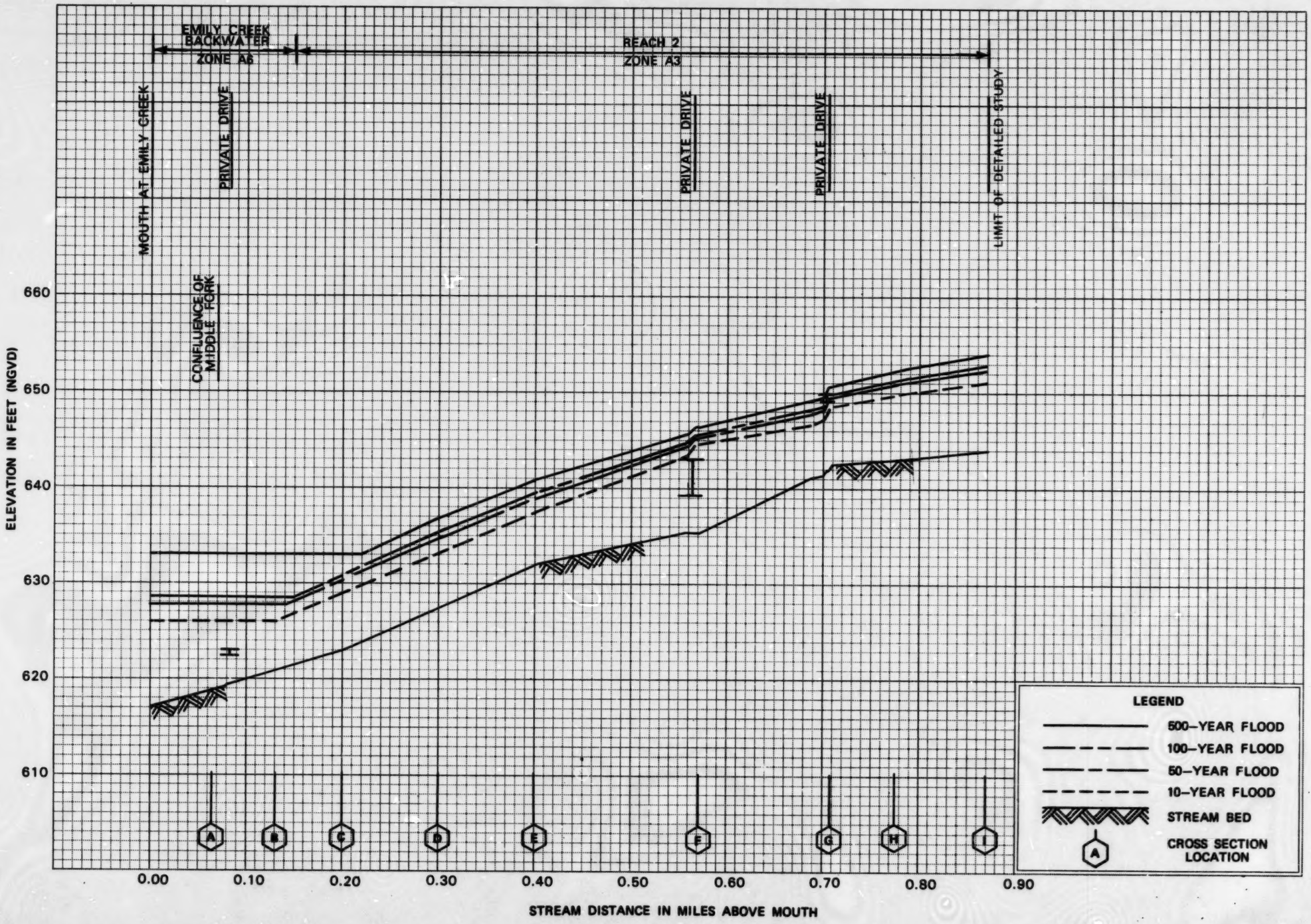
BLACKLOG FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

24P

BEST COPY AVAILABLE



FLOOD PROFILES

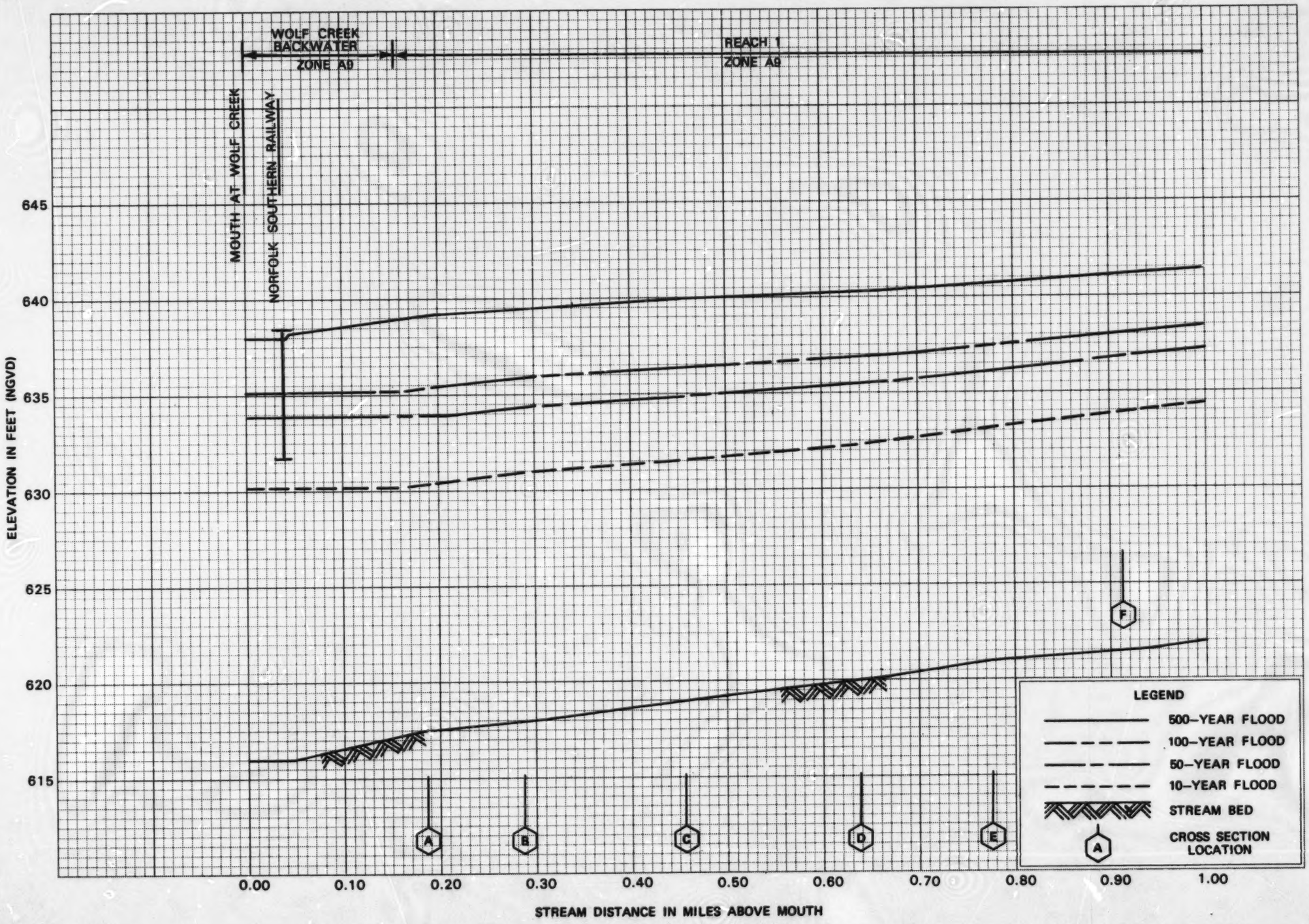
WHITE OAK FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

25P

BEST COPY AVAILABLE



FLOOD PROFILES

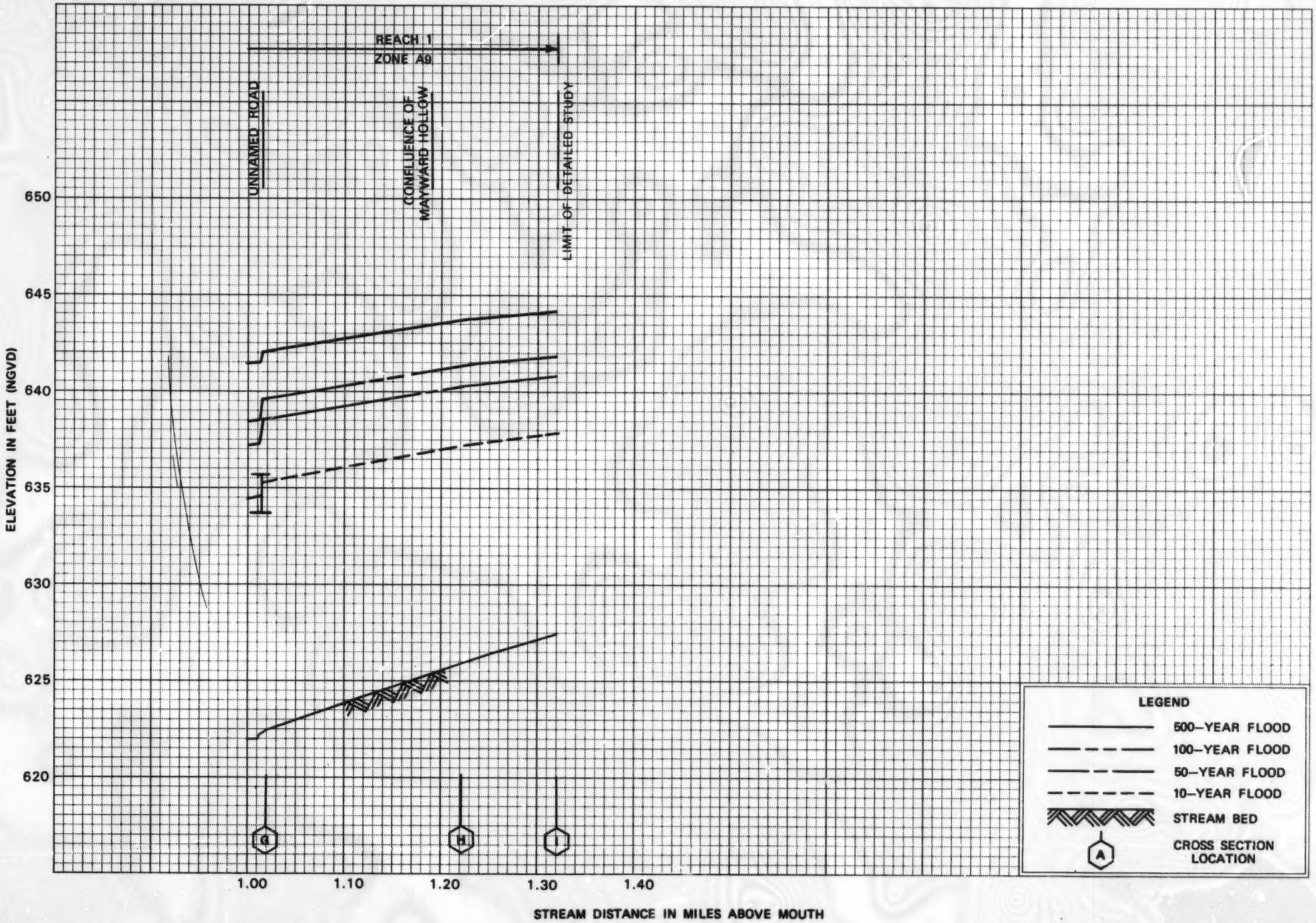
PIGEONROOST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

26P

BEST COPY AVAILABLE



FLOOD PROFILES

PIGEONROOST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARTIN COUNTY, KY
(UNINCORPORATED AREAS)

27P

BEST COPY AVAILABLE